

HP Professional

JUNE 1997

HP-UX

Windows NT

MPE/iX

A Cardinal Publication

U N I X V S N T

In This Corner

Float like a butterfly, sting like a bee; When it comes to OSES, think UNIX *and* NT.

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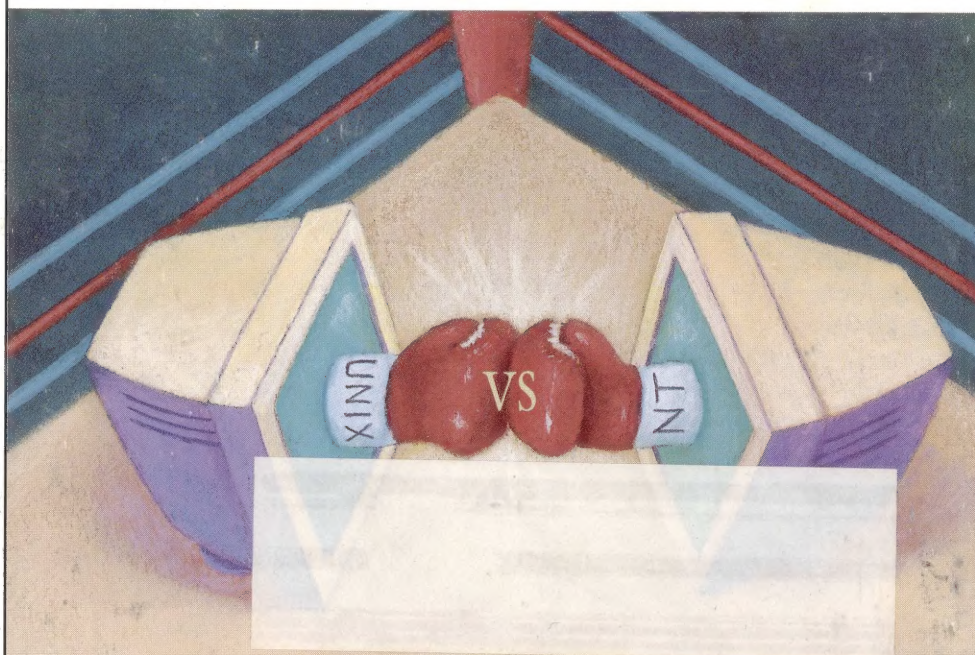
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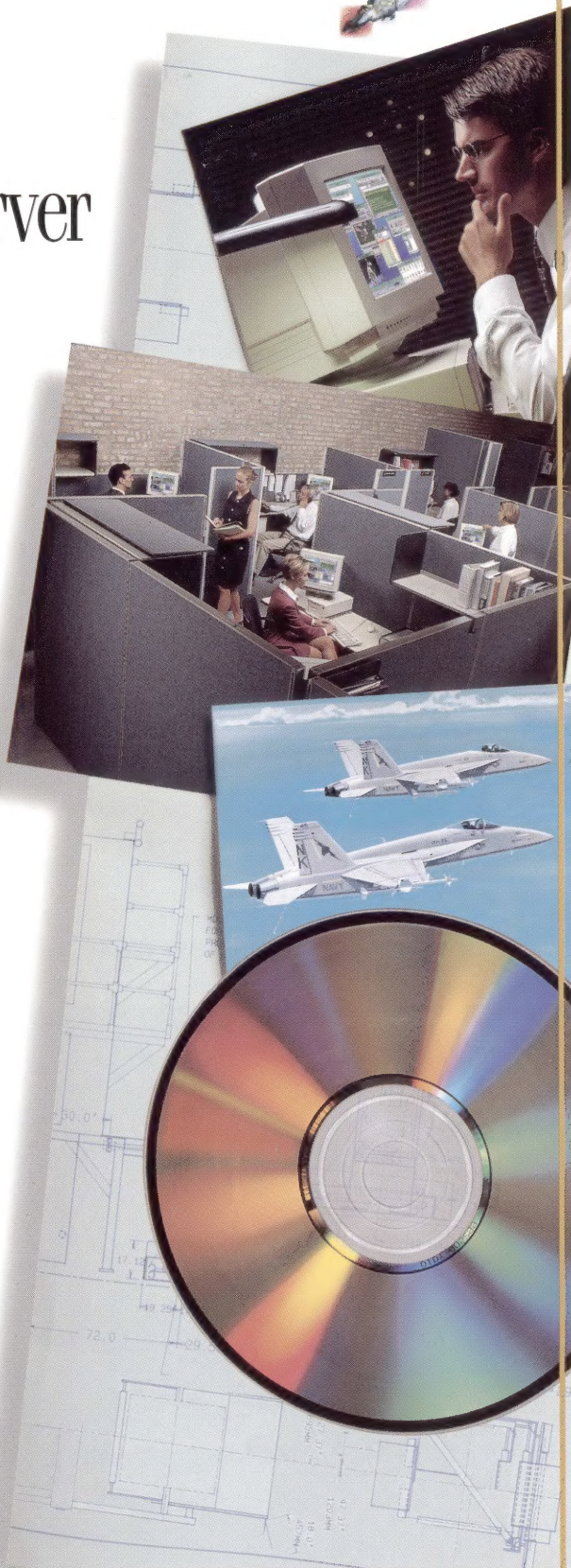
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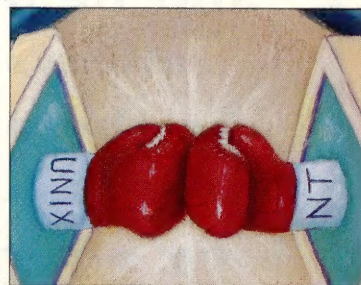
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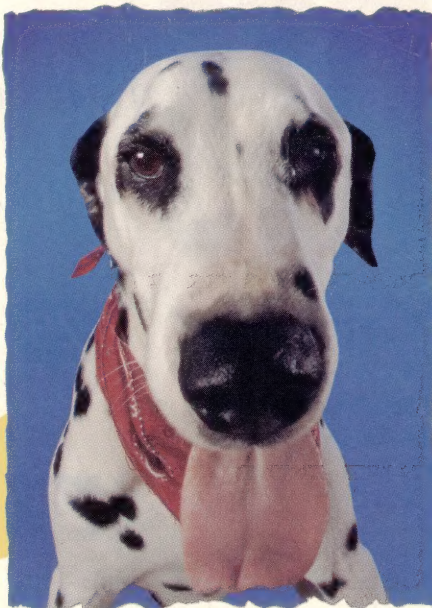
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CIRCLE 246 ON READER CARD

Masters Of All

HP was recently named the number one UNIX vendor in the United States; is celebrating the 25th anniversary of the HP 3000 and the first handheld calculator; and, like it or not, has successfully launched a seemingly intelligent Windows NT strategy (yeah, yeah, I know). Who says you can't be good at everything? Some might argue that you can't. And HP may yet find that to be true. But here at *HP Professional*, we *can* and *do* cover all the news that's fit for HP users.

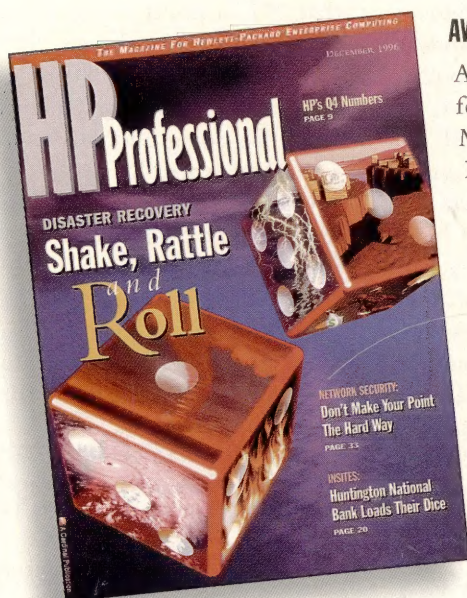
And we bring it all to your desk. You know, much like the real world hits you every day. Only we study, sift and analyze, so you don't have to. In order to understand the future as an HP user, you must understand the position of the HP 9000, HP-UX, HP NetServers and Windows NT, as well as the HP 3000. However, most of you have more than just an HP 9000 or just an HP 3000. And fewer are just strictly NT shops, despite what Uncle Bill tells you. Anyone who doesn't believe, understand and accept those realities will be left by the roadside — in a ditch.

What was once a wide open field of network operating systems, including the likes of MVS, OS/2, NetWare, Vines and dozens of UNIXes, is quickly becoming a market share battle between Windows NT as a file, print and application sever and the continued strength of high-profile UNIXes such as HP-UX, Solaris and AIX as enterprisewide and data-intensive platforms. From where I'm sitting, it is likely that both NT and UNIX will be left standing, each with its respective strengths intact. Your job will not be so much to declare a winner between the two, but rather to find the proper integration of UNIX and NT within your enterprise.

HP has made it clear that it has no techno-emotional attachments — so you shouldn't either. A fanatical devotion has proven the kiss of death for too many, both IS managers and corporations alike. Whether you think it's a strategic maneuver, a sell-out or complete capitulation, you can't ignore that HP has gone through the Window. So look for a UNIX-to-NT column later this year inside *HP Professional*.



Charlie Simpson
simpsoncm@cardinal.com



AWARD WINNING WAYS

After kicking off 1997 with a new cover design and a few under-the-cover improvements including Mark McFadden's Internet column and Greg Barnes' Networking column, *HP Professional* was honored in May with two awards from the American Society of Business Press Editors (ASBPE) for our work in 1996.

HP Professional's Industry Watch news section won an award in the News Category. And we also garnered a graphics design award for our December 1996 Disaster Recovery issue.

Although we did make some news of our own in receiving the ASBPE awards, we at *HP Professional* are resolved to continue to be your objective voice on HP news, trends and technologies, so you can understand what it means to you, your systems and your job.

HELL NO, UNIX WON'T GO!

Hmmm, no way I am going to leave UNIX, been at it since '78.

By the way, what about Linux on HP PA-RISC? Do *you* know anything about any porting efforts?

*Ivar Ruyter, Research Manager
Forschungszentrum Juelich GmbH*

From where we're sitting, Linux is not available for HP PA-RISC and is not likely to be in our lifetime. — Editors

I never miss your editorial, but lately I haven't been getting a lot out of *HP Professional*. But this letter isn't about that (after all, I've had so many other projects & directions). The fact that I'm not spending a lot of time reading my magazines may only mean that our HP isn't *that* much on my mind. But your recent editorial on HP/Microsoft [April 1997] got me writing.

You are right on about being shown the money, but man, who would have thought that HP would sacrifice customers for bucks?! I get a new HP sales rep every four to six months. We only spend \$20K-\$40K a year on HP hardware/software, so we don't get the "good" reps that keep their jobs. Instead, we get the trainees who move on to better positions after a few months, and I pay thousands upon thousands a year for support (when you need it, they actually know their stuff). But HP is doing nothing more than pimping their customers for Bill.

However, this attitude might not be MS's doing. I think HP is simply showing what happens when the core believers leave a company ... money talks. I think that it's been a battle for years not to maximize profits. After all, it's very hard to convince the board that we should make less money [now] than possible in order to achieve long-term growth. And when HP lost its core visionaries, the board and greed took over. Maybe I'm making a lot more out of this. But then again...

Recently, we upgraded our HP 9000/827. I called HP Direct, and after much hassle found a refurbished H40

(64MHz instead of 48MHz, and some other stuff) for \$3,000! What a deal. It was being shipped from Germany, and took about 8 weeks to get here. When it came time to install the board, we decided to add more memory, a CD-ROM (interesting that HP uses only Toshiba SCSI drives, while they make drives themselves.), and a new Fast/Wide Jamaica Drive and a 2GB F/W drive (an improvement from our 1.2GB SCSI).

We also need to upgrade from HP-UX 9.04 to something over 10.10 for support of the CD-ROM online manuals, plus HP-UX 9.x is getting old, and I am starting to get HP Techs who don't know HP-UX 9.x commands. The nice software support technician suggested we use HP's HP-UX 9.x to 10 Migration Support program. The information form states that you need to provide the name of an individual who has administrator abilities, and to include a PO number where the \$1,200 fee could be assessed to. Now understand that this fee is a payment for the evaluation, not the actual service of migrating 9.x to 10!

They expect me to give them \$1,200 so they can send me a DAT tape and a script that dumps a file listing to the tape, looks at my filesystem and then tells me how much it's going to cost to actually do the work! Sure, if we were a 100,000-employee company with 100 HP servers, but for a company with one HP box, 40 users, 80 megs and a 680MB filesystem, \$1,200 is probably a bit much. HP's losing sight of the trees through the forest.

The HP engineer that had been working with me on this honestly suggested that we might want to think about buying a completely new box with 10.20 installed — as it would be cheaper! He also mentioned that because we have software support, I could screw the thing up, and call HP — after all, they have to fix it because it's a support issue.

Anyway, we wound up installing a clean copy of 10.20 on the new F/W SCSI drive, and are recreating the 40 users and six printers. The HP hard-

ware tech who helped us install the new motherboard helped install HP-UX 10.20 after we finished the hardware call at no additional cost. It's a real relief to see that HP still has quality people where it counts, at the tech level — too bad management is going to the \$\$\$.

*Craig Hufnagel, IS Manager
State of the Art Inc.*

Enjoyed your editorial from the April 1997 issue of *HP Professional*.

As an HP-UX system administrator, I couldn't agree with you more when you say things like, "To cement the HP-NT sell-out." And I too am nauseated at HP's apparent capitulation.

I despise Microsoft, which is why I was happy being a UNIX system admin, until HP sold its soul to the devil. It's why I use OS/2 on the desktop. It's why, I guess, I'll have to go find a job with a true blue shop or find a job with IBM directly. Maybe I can be an AIX administrator?

If my state agency is anything like other businesses, we are seeing a very severe polarization between the NT groups here and the UNIX groups. Microsoft is the darling of our shop while UNIX is not really understood by many. Most seem to think, naively, that NT is going to replace all our UNIX stuff very shortly. It's pretty scary. I wonder how HP is going to combat this? Our shop doesn't care much for doing business with anyone but Microsoft. So what if HP is "embracing" NT. If the political climate doesn't change, HP is a thing of the past here.

*Victor M. Palma, Jr.,
System Administrator
Department of Labor and Industries,
State of Washington*

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CIRCLE 108 ON READER CARD

INDUSTRY WATCH

George A. Thompson

HP CALLS VERIFONE HOME FOR E-COMMERCE

In April, HP signed a definitive agreement to acquire VeriFone Inc. (Redwood City, Calif.). After the deal is completed, VeriFone, an electronic commerce company founded in 1981, will operate independently as a wholly-owned subsidiary of HP. In a stock-for-stock merger valued at approximately \$1.18 billion, VeriFone shareholders will receive one share of HP common stock for each share of VeriFone common stock owned. VeriFone had net revenue of \$472 million in its 1996 fiscal year.

Hatim A. Tyabji, VeriFone chairman, president and CEO, will continue his role as president and CEO of VeriFone, reporting to Richard Belluzzo, president of HP's Computer Systems Division. At HP, Glenn Osaka, general manager of the Enterprise Systems Business Unit, has been named to lead efforts in electronic commerce and to coordinate with Tyabji.

The acquisition is intended to be accounted for as a pooling of interests. It is expected to close this summer (perhaps by the time you read this), subject to approval of VeriFone shareholders.

Projected Online Sales (\$ millions)

Category	1996	1997	1998	1999	2000
Computer Products	\$ 140	\$ 323	\$ 701	\$ 1,228	\$ 2,105
Travel	126	276	572	961	1,579
Entertainment	85	194	420	733	1,250
Apparel	46	89	163	234	322
Gifts & Flowers	43	103	222	386	658
Food & Drink	39	78	149	227	336
Other	39	75	144	221	329
Total Sales	518	1,138	2,371	3,990	6,579

Source: CyberAtlas

V E R B E T A

**It's not the technology,
it's the patents.**

“Intel's unauthorized use of Digital's technology to significantly enhance the performance of its microprocessors violates Digital's legal rights.”

— Robert B. Palmer, Digital's Chairman, CEO and President, announcing that Digital is suing Intel Corp. for patent infringement.

DRIVING DOWN THE FREEWAY OF WEB COMMERCE

As HP and VeriFone join forces to reach the pot of e-gold at the end the e-commerce rainbow, here's what's causing the excitement. According to Multimedia Resources (Larchmont, N.Y.), a research agency of MasterCard International:

- There are potentially 25 million individuals in the United States using the Web. That's double the number of all proprietary online services.

- A demographic shift that includes a diverse audience of men, women and children from one that served primarily male “nerds.”

- Better search engines, directors and the prevalence of banner ads have helped to make the Web easier to navigate and to find useful information.

- The appearance of industry-standard

security protocols — SSL (Secure Socket Layers) — and payment security protocols like SET (see related story, page 10).

- The existence of online category killers like amazon.com or FedEx (see table, page 10) whose businesses are optimized for the Web.

HP, MICROSOFT AND DIGITAL COM AWAY IN A PARTNERSHIP

At Microsoft's Tech-Ed Conference in May, HP, Microsoft and Digital announced plans to provide Microsoft's component object model (COM) on Digital and HP operating systems within the year. COM, much like the Object Group's CORBA, enables developers to build, use, extend and reuse distributed software components in a language-independent way.

Although Microsoft has submitted a subset of the COM specification to several industry standard groups, COM, as an integral part of the Windows operating system, is not considered an “open standard” compared to CORBA. CORBA is in its third generation and has been endorsed by Sun, IBM and Netscape as part of their distributed computing strategies. However, HP and Digital have also endorsed the CORBA standard.

SLIP, SLIDIN' AWAY

HP Celebrates 25th Anniversary Of First Scientific Handheld Calculator

In transportation, the automobile replaced the horse and buggy. The telephone revolutionized communications by effectively replacing the telegraph. And in 1972, the engineering world was revolutionized when HP introduced the HP-35 — the first hand-held calculator which quickly replaced the venerable slide rule. “It is exciting to look back over the years

and see how the HP-35 and subsequent calculators, such as the HP-12C, have shaped the way generations of students learn math and finance," said Alex Sozonoff, vice president and general manager of HP's Worldwide Sales and Marketing Organization. Sozonoff moved to California in 1971 to manage the worldwide launch of the HP-35, and signed up the first dealers for the new calculator in 1972.

The HP-35 weighed only 9 ounces and could fit easily into an engineer's shirt pocket. Bill Hewlett would have it no other way. Hewlett was quoted as saying, "You ought to be able to put it in your pocket and attend a meeting without having to haul out something that isn't convenient."

And why, you might be wondering, did HP call it the HP-35? Because it had 35 keys.

NOTHING BUT SET FOR HP, VERIFONE AND MICROSOFT

In May, on the heels of HP's acquisition of VeriFone (see page 9), HP, VeriFone and Microsoft announced that they would all collaborate closely to roll out pilot and production solutions based on the Secure Electronic Transaction (SET) protocol standard, allowing merchants to set up Internet storefronts, accept Internet payments and conduct SET transactions over the Web. This cooperation expands upon previous, independently announced agreements by the three companies and

marks the first end-to-end integrated joint initiative supporting the SET standard.

HP VARs AND ISVs GET TO THE POINT

In May, Integration Alliance Corp. (IAC; Denver, Colo.), an exclusive HP distributor, launched an innovative program called AlliancePoint. The purpose of the program is to build partnerships among HP Value Added Resellers (VAR) and Independent Software Vendors (ISV). Commercial systems are built by IAC's HP- and ISV-trained staff of professionals, and then sold and supported by IAC's North American network of resellers many of whom are ranked "Best-in-Class" resellers by HP.

TO BEAT THE BAAN

Integration Alliance Corp. (IAC), the Baan Co. and HP announced an agreement making IAC the source for integrated Baan IV solutions running on the HP Wintel NetServer and HP 9000/HP-UX commercial server product lines. For Baan customers, IAC plans to integrate HP-based solutions that include the appropriate operating systems, RDBMS, middleware and application software. IAC's team of HP-certified technicians will have access to the latest software releases and updates, enabling them to configure complete built-to-order commercial systems.

As an authorized Baan solution partner, IAC will work with Baan business partners, the Baan direct sales force and the HP direct sales force to facilitate the delivery of Baan solutions running on HP servers. The new relationship is expected to streamline the delivery of custom-built, pre-loaded and quality-tested Baan and HP business solutions to end-user customers across North America.

INTERGRAPH SOFTWARE BUNDLED WITH VECTRAS

Intergraph Software Solutions (ISS) and HP announced a joint marketing and distribution agreement to include ISS' AccessNFS Solutions CD with HP's new Vectra XW Graphics PC Workstations (shipping this month). By installing the CD, HP customers will be able to evaluate Intergraph's award-winning line of interoperability products. Under the agreement, HP customers responding to the invitation will be able to load the software and have 30 days to evaluate it.

AccessNFS Solutions features: DiskAccess, the first NFS client for Microsoft Windows NT 4.0; DiskShare, an NFS server; eXalt, an X-based server; and Batch Services, a batch scheduling system. The CD also provides information about the AccessNFS Gateway product which will be shipping in June and RhaPC-d, a toolkit for creating client-server applications on Windows NT. ISS, a

WHAT MAKES A GOOD WEB COMMERCE SITE?

Attributes

Example Sites

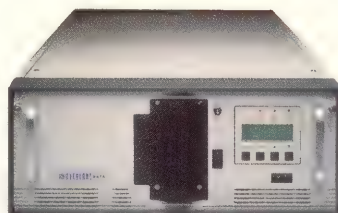
- | | |
|------------------------------------|--|
| 1. Know the User | www.800flowers.com; www.onsale.com; www.fedex.com; www.etrade.com |
| 2. Offer Competitive Pricing | www.amazon.com; www.necx.com; www.cdnow.com; www.onsale.com; www.etrade.com |
| 3. Offer an Information Component | www.amazon.com; www.fedex.com; www.cdnow.com; www.industry.net |
| 4. Wide Product Selection | www.amazon.com; www.cdnow.com; www.necx.com; www.hothothot.com; www.industry.net |
| 5. Build an Online Community | www.amazon.com; www.industry.net; www.cdnow.com |
| 6. High-Quality Customer Service | www.800flowers.com; www.fedex.com; www.necx.com; www.hothothot.com; www.etrade.com |
| 7. Exploit the Power of the Medium | www.onsale.com; www.industry.net |

Source: Multimedia Resources (Larchmont, N.Y.)



Tough to scale

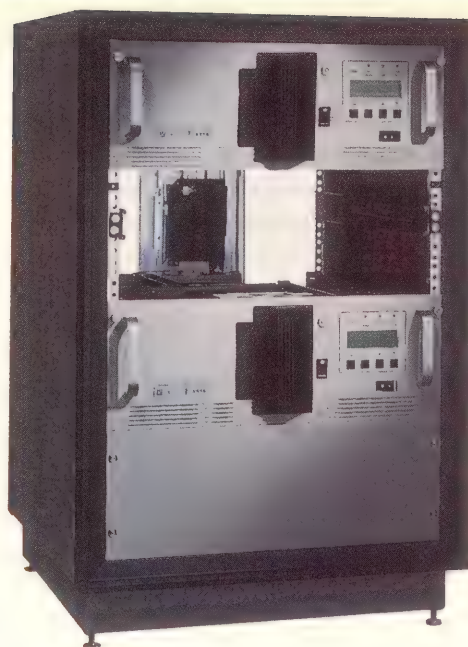
Protect your investment in tape backup equipment with the LibraryXpress system. Begin with a base module containing one or two DLT4000 or DLT7000 drives and 10 cartridges. This will provide you with a storage capacity of up to 700 gigabytes and a data rate of 72 gigabytes per hour.



The exclusive Global Control unit passes cartridges between modules, allowing any cartridge to access any drive in the system, for true maximum system performance. Up to nine modules can be combined to create the ultimate automated storage system. Network administrators can continually fine-tune LibraryXpress expansion by balancing the ratio of tape drives to cartridges. Optimal configurations based on individual capacity, performance and budget requirements are easily achieved without the need to lock into a vendor-defined growth path of only a few possible configurations.

IEM is a full solution provider:

Combine LibraryXpress with our excellent software backup choices Alexandria and DallasTools.



Easy to scale

Scale up with any combination of stackable modules. Choose from a performance module, with up to five drives, or a capacity module, with 16 cartridges.



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Fax: +[1] 970-221-1909

business unit of the Intergraph Corp. (Huntsville, Ala.), develops and markets integrated software for the Technical Desktop. Customers wishing to purchase the product may do so directly from Intergraph and HP.

NEXT STOP IS VIETNAM

When Dave Packard joined the Defense Department in 1969, the Vietnam War was at its height. But 28 years later, HP celebrated the opening of a permanent office, in Ho Chi Minh City at 29 Le Duan St., District 1. The HP Vietnam office, located on the 10th floor of Saigon Tower, provides information technology services and marketing support to HP partners and customers in Vietnam.

"We're very pleased to have found a permanent location for our offices in both Hanoi and Ho Chi Minh City," said Bob Hughes, general manager of HP Vietnam. In Hanoi, the company's office is located on the 3rd floor of 139

Bui Thi Xuan St., Hai Ba Trung District. HP has been represented in Vietnam by local distributors and VARs since 1994.

INTEL'S NEW PENTIUM II CPU

In May, Intel Corp. introduced the Pentium II CPU. With speeds of 233, 266 and 300MHz, the Pentium II integrates Intel's Pentium Pro and MMX technologies into a new Single Edge Contact (SEC) cartridge package. The Pentium II CPU, with 7.5 million transistors, is based on Intel's P6 architecture and is manufactured on .35-micron process technology. Like the Pentium Pro CPU, the Pentium II processor has a closely coupled L2 cache design. The SEC, where components are mounted on a substrate and completely enclosed in a plastic and metal enclosure, replaces the traditional Pin Grid Array (PGA) CPU packaging of Intel processors.

The 266 and 233MHz Pentium II processors with 512KB L2 cache are available today in desktop systems from leading computer manufacturers including HP. Pricing in 1,000-unit quantities is \$775 and \$636 for the 266 and 233MHz parts, respectively. The 300MHz processor for workstations is priced at \$1,981 in 1,000-unit quantities. The 300MHz processor will be available in workstations in the third quarter.



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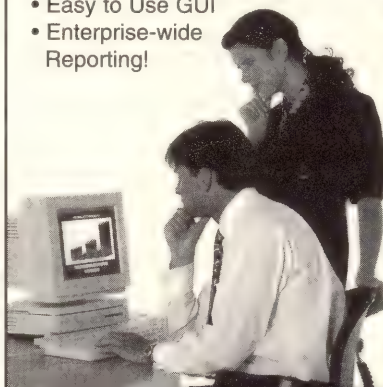
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CIRCLE 406 ON READER CARD

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CIRCLE 198 ON READER CARD


```
corp:/acctg >ls general.ledger
UX:ls: ERROR: Cannot access general.ledger:
No such file or directory
```

```
corp:/acctg >ls payroll.1qtr
UX:ls: ERROR: Cannot access payroll.1qtr:
No such file or directory
```

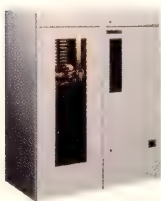
```
corp:/mfg >ls inventory.cont
UX:ls: ERROR: Cannot access inventory.cont:
No such file or directory
```

```
corp:/mfg >ls order.entry
UX:ls: ERROR: Cannot access order.entry:
No such file or directory
```

NOTHING

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CIRCLE 408 ON READER CARD

A Room With Several Views



SUPERVIEW 1000 & 2000

- ▶ Video input signals may be NTSC, PAL or S-Video
- ▶ Windows can be scaled to full screen, overlaid with graphics or overlapped with other video windows
- ▶ Controlled over an RS-232 port
- ▶ Prices start at: \$20,695 for the 1000; \$15,995 for the 2000

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CIRCLE 355 ON READER CARD

Casinos offer a variety of gambling opportunities — from roulette to black jack to craps. And don't forget sporting event and off-track betting. The Orleans Casino in Las Vegas, Nev. uses several SuperView 1000 video windowing machines from RGB Spectrum (Alameda, Calif.) to display multiple live video images (sports events, horse races, etc.) on a single screen. Video input signals may be NTSC, PAL or S-Video, and the display screen may be any monitor or data display projector with a resolution of up to 1600 x 1280 pixels. In fact, the high quality of video images makes this system ideal for applications including entertainment and gaming, multimedia display, remote video monitoring and

teleconferencing.

Standard SuperView 1000 models come configured for four or six video displays, but can be upgraded to handle up to 24 live video windows simultaneously. The system provides an alternative to video walls and other arrays of monitors or projectors. Advanced features include pan and zoom, the ability to independently position and scale windows, and automatic genlock to a computer signal for overlaying graphics.

The SuperView 1000 may be used in either of two modes: with the screen displaying only video windows or with a computer screen in the background. When used with a computer, the SuperView system is compatible with virtually all workstations from SGI, Sun, HP, IBM and Digital. The video windows may be arranged in any configuration.

Also available is the SuperView 2000 model, which comes configured with two to six video displays. Types of input include high-resolution up to 2048 x 2048 (background), NTSC, PAL and S-Video.

The SuperView 2000 processor displays up to six real-time video windows on one high-resolutions computer monitor. Each window can

be positioned, scaled to full screen, overlaid with computer graphics or overlapped with other video windows. In addition, the user can pan and zoom within each video image. SuperView 2000s were designed to meet the demands of air traffic control, C3I, surveillance and simulation.

A standalone peripheral, the SuperView 2000 processor is controlled over an RS-232 port. It connects between the host computer and its monitor over RGB lines, and combines the video and computer signals downstream of the computer frame buffer. Its architecture offers a unique advantage: no burden is imposed on the host CPU, frame buffer or bus. The frame buffer continues to perform all normal window operations and graphics processing.

The system supports software control to manipulate the video windows, adjust video parameters and control graphics overlays. Optional X.TV software provides integration under X Windows.

Pricing starts at \$20,695 for the 1000 and \$15,995 for the 2000.

—Deborah Schwartz,
Associate Editor

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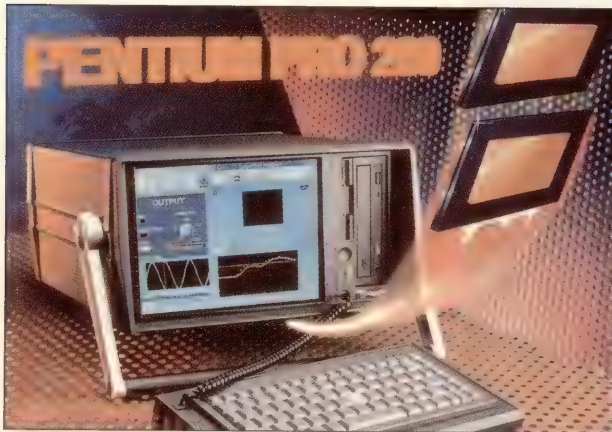
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CIRCLE 294 ON READER CARD

MegaPACing A Portable Punch



DUAL MEGAPAC PRO

- Uses up to a single 200 MHz Pentium or up to two Pentium Pro CPUs with RAM configurations up to 128MB
- Accommodates a five-drive 45GB RAID or up to eight full-size ISA/PCI expansion cards
- Price is \$12,000

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CIRCLE 351 ON READER CARD

The customer who would consider [one of our products] wants all the power of a desktop system in a portable package that will withstand the abuse it will take as you get it from point A to point B." And that succinctly explains the niche occupied by Dolch Computer Systems Inc. (Fremont, Calif.). Also, according to company spokesman Don McCook, because the products are often integrated into other devices used for in-the-field testing, many end users probably aren't aware of the Dolch product. For example, some airline companies use it for testing engine vibrations.

The company's latest addition to their line of six power portable computer systems is the Dual

MegaPAC Pro (Massively Expandable Portable Add-in Computer). The lunch box style system is designed to accommodate a variety of standard peripherals, including a five-drive 45GB RAID or up to eight full-size ISA/PCI expansion cards.

Dolch's IsoGuard eight-point mounting system provides a chassis-within-a-chassis that suspends the inner aircraft-alloy card cage in a "floating vault," thereby isolating it from external shocks and vibrations. The Dual MegaPAC Pro can withstand up to 20Gs from the precipitous drops and other accidental occurrences common in in-the-field environments. Overtravel snubbers are mounted between the two chassis to further protect the sensitive electronic guts.

The MegaPAC can use up to a single 200 MHz Pentium or up to two Pentium Pro CPUs with RAM configurations up to 128MB (8MB standard). Hard drives up to 9GB (1GB standard) are available with a multispeed CD-ROM or any other half-height peripheral. It also uses a 10.4-inch active matrix flat-panel display with VGA or SVGA resolutions. And with Dolch's VIPER flat panel controllers, it can display up to 16.7 million colors. Also

included are two RS-232 ports, an enhanced parallel port, an 84-key keyboard and a pointing device.

It has a dual 250W power supply, offering redundancy in standard power environments. For field units, an AC/DC/UPS power switching supply lets users plug in anywhere. The user can connect to AC and DC at the same time. The machine will make the choice.

The unit is cooled by filtered air blown across both CPUs, the power supply and the add-in cards, and it is then blown out the back of the unit. An internal thermostat senses any danger from overheating.

Price is \$12,000 for a configuration with 32MB of RAM and a 1GB hard drive. Also standard is a single 3.5-inch disk drive and DOS/Windows 3.11. Options include tape streamers, CD-ROM drives, a removable hard drive and two Type II/one Type III PC Card slots. OS/2, Windows 95, Windows NT and UNIX can be installed at an additional cost.

—Steve Berlin,
Contributing Author

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No Time Like The Present

NETWORK ALERT STATUS						
	HOST	PRIORITY	PROBLEM AREA	PROBLEM DESCRIPTION	TIME OF ALERT	PROBLEM IDENTIFICATION
9	vogon	FAILURE	HOST FAIL	picart: 1 min NO RESPONSE	01/09/96 14:48:26	HOSTFAIL5~vogon-picart
13	vogon	FAILURE	HOST FAIL	nomad: 1 min NO RESPONSE	01/09/96 14:58:42	HOSTFAIL5~vogon-nomad
3	vogon	PROBLEM	SYBASE	Vertigo SCH Print Problem	01/09/96 14:14:06	SYBASE2~vogon-Vertigo SCHPR
14	vogon	PROBLEM	SYBASE	SCHPR Error Log Changed on	01/09/96 14:59:11	SYBASE1~vogon-SCHPR Error L
10	cygnus	FYI	FILE SYSTEM	/dev/disk/c0t3d0s6 on /usr 92.39%	01/09/96 14:52:40	FSFYI~cygnus-/dev/disk/c0t3d0s6
11	vogon	FYI	FILE SYSTEM	/dev/hd2 on /usr 93.26% Space	01/09/96 14:55:12	FSFYI~vogon-/dev/hd2
15	vogon	FYI	FILE SYSTEM	/dev/racl on /reel 93.76% Space	01/09/96 14:59:50	FSFYI~vogon-/dev/racl

SYSTEMWATCH

- Considers time-of-day, user ID and the affected systems to determine its action
- Supports HP-UX 9.04 to 10.2, SunOS and Solaris, IBM AIX, Digital Alpha platforms, Windows NT and SGI
- Price begins at \$695

SCH Technologies

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fax: (513) 579-1064
info@sch.com
www.sch.com

CIRCLE 353 ON READER CARD

“Why wait until after the system crashes and the crisis develops to diagnose and solve the problem?” That was the question asked by Don Smith, formerly systems manager and now IS project administrator at Skyway Freight Systems Inc. (Watsonville, Calif.). Until the introduction of SCH Technologies’ (Cincinnati, Ohio) SystemWatch, a systems management tool that manages distributed UNIX systems, most UNIX system administrators have not had the ability to anticipate and solve problems before they occurred.

At Skyway, which provides transportation and logistic solutions for companies requiring specialized services, the SystemWatch console is currently running on an HP 9000 715/100 workstation and continuously monitors five of Skyway’s most critical application

servers: an HP T500, two HP H50s, one HP E35 and one Sun SPARC II workstation. Smith plans to expand SystemWatch installation to all existing and new servers. As file servers are deployed to remote locations, SystemWatch will be installed on them as well.

SystemWatch runs “out-of-the-box,” managing disk space, memory, swap space, CPU utilizations, host availability, database performance/availability, system/application processes and system logs. Designed to reduce or eliminate “fire fighting” by system administrators, SystemWatch takes intelligent corrective actions without administrator intervention. “It has taken process that were causing us problems — ones that were failing or dropping offline — and not only monitors them, but restarts them before the users even know there is a problem,” says Thomas Duck, vice president of information systems at Skyway.

The program’s event management uses predefined rules to take specific steps when SystemWatch detects a problem. SystemWatch can execute a command or script on hundreds of systems as required, often before the administrator is even aware there was a problem. In addition to an included library of predefined actions, the system administrator can define site-specific actions.

SystemWatch uses expert system technology to analyze system information and take corrective action. SystemWatch even considers such factors as time-of-day, user ID and the affected systems to determine its action. SystemWatch “learns” which alert conditions are commonly dismissed by the operator and intelligently adjusts the reporting interval.

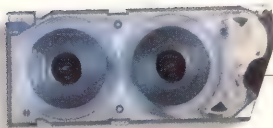
SystemWatch is designed around a “client-centric” architecture, in which all management components and decision-making logic resides on each managed client in the network. This means only qualified alert notifications are reported to the management console.

Pricing begins at \$695, including one year of maintenance. It supports HP-UX 9.04 to 10.2, SunOS and Solaris, IBM AIX, Digital Alpha platforms, Windows NT and SGI.

—Deborah Schwartz,
Associate Editor

ABCDEFGHIJKLMNOPQRSTUVWXYZ

Sometimes the
quickest way
from A to Z
is to start
in the middle.



Magstar MP, with its unique midpoint loading and exceptional reliability, retrieves most data up to three times faster than comparable systems.

The Magstar™ MP storage system starts in the middle of the tape, instead of the beginning, so you can retrieve most data up to three times faster than comparable tape storage systems*. (Such a simple idea, our competitors wonder why they didn't think of it first.) Which means tape isn't just for backup

anymore. With Magstar MP's remarkable three-year warranty, and prices starting as low as \$8,500, you can confidently use tape for all your storage needs. Contact your IBM representative or IBM Business Partner,™ or visit www.storage.ibm.com for more information and a copy of our warranty.

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*For most single file restores. Based on "Demystifying Tape Performance," a comparison with two leading midrange systems, available at www.sresearch.com. IBM is a registered trademark and Magstar, Business Partner and Solutions for a small planet are trademarks of IBM Corporation in the United States and/or other countries. © 1997 IBM Corp.

CIRCLE 149 ON READER CARD

A Straight Line To Storage



SL-820

- 500GB (native), 1TB (compressed) storage capacity
- Supports up to 20 8mm tapes
- Price starts at \$9,995

StraightLine

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fax: (206) 637-9583
igm@igm.com
www.igm.com

CIRCLE 352 ON READER CARD

Phuong Chen, a technical consultant engineer at Cordant (Reston, Va.; a subsidiary of Tracor), started using IGM Communication's (Bellingham, Wash.) ATL-5000 about three years ago.

The ATL-5000 is based on older 8mm technology. In 1994, IGM was acquired by StraightLine (Bellevue, Wash.). The AT-5000 has since been updated to take advantage of the newer Sony AIT and Mammoth 8mm technology, and now appears as the SL-800 series.

Cordant, whose primary customers include the U.S. armed forces and several U.S. intelligence agencies, now has 11 SL-820s running in conjunction with Informix-Online 7.12 on a UNIX-based enterprise. The SL-

820s are used for storing and backing up images of the millions of U.S. Navy enlisted personnel records. These records are then available for online review. The SL-820 systems are housed in a Navy annex in Arlington, Va. and in another site in Millington, Tenn. All the systems will be migrated to the Millington site within the next year.

According to Chen, the SL-802's best feature is its command-line front-end. "I can type in code to easily choose a specific tape," says Chen. "It gives me a lot of control over the jukebox."

The SL-820 is a 20-tape model within StraightLine's SL-800 series of tape libraries. The other SL-800 libraries hold from 10 to 150 8mm tapes. The SL-820 also has a total storage capacity of 500GB in native mode and up to 1TB using data compression. Throughput reaches 540MB per minute.

Just like the larger members of the SL-800 series, the SL-820 includes advanced software interfaces for subsystem mechanics and diagnostics, and a choice of operating modes including SCSI-2, sequential or serial mode commands.

It supports up to two Exabyte (Mammoth or 8505XL) or three Sony

(SDX 300C) 8mm tape drives, and 20 8mm tapes. The unique tape drawer allows speedy tape loading and unloading. An optional bar code reader also is available.

The tape drives are the only parts that need replacement or expansion. StraightLine libraries are compatible with all major backup software vendors.

With the introduction of the SL-820, StraightLine completes its range of tape library systems. "We have a product line that is scalable to the customer's needs, with 20, 50 and 150 tape systems available," says Steve Brockway, president of StraightLine.

The SL-820s are compatible with HP-UX, IBM AIX, Banyan, Digital Ultrix and VMS, NCR, Pyramid, SCO, Sequent, Silicon Graphics, SunOS, Solaris, Novell NLM, DOS, Windows NT and OS/2. The SL-820 is priced from \$9,995. Prices for the rest of the SL-800 series range from \$23,995 to \$61,995, depending on configuration.

StraightLine also manufactures 4mm tape libraries, the SL-400 series, which support DDS-3 technology.

—Deborah Schwartz,
Associate Editor

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CIRCLE 159 ON READER CARD

States Of Desire

Sterling Software Expands System And Network Management To Provide A Desirable Business Perspective.



"With 'desired state' management, you don't just see devices, but how they affect one another."

Stephen Lafferty
Director of Product
Management
Sterling Software

Sterling Software

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Reston, VA 20191
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www.omd.sterling.com

CIRCLE 354 ON READER CARD

Imagine a screen that depicts the activity of all your network components. Buttons flicker green and red indicating the status of each device. But, is a green light good and a red light bad?

According to Stephen Lafferty, director of product management with the Operations Management Division (OMD) of Sterling Software (Reston, Va.), simply knowing whether a router, printer or application is on or off is just not informative enough anymore. So, Sterling Software is trying to gain market share by taking network and systems management one step further with an approach called "desired state" management.

With "desired state," a status light will be green if the desired state equals the actual state. For example, if a specific printer is critical to an accounting function from 1 p.m. to 2 p.m. on the first Monday of each month and it's active during that time, the status light would be green. But, the light would also be green from 2 p.m. to 3 p.m., even though that printer is inactive.

In February, Sterling Software's portfolio of 100 applications, installed at more than 20,000 sites worldwide, increased by two with the

introduction of new "desired state" products — SOLVE: Operations for OpenView and SOLVE: Operations for NetView/AIX (\$15,000 to \$35,000 per installed copy, depending on the implementation).

"[SOLVE: Operations] enables [the user] to identify their most critical apps first and handle them," says Lafferty. "It helps administrators determine which devices are important when, as well as helping them establish a priority list. And in today's distributed environments, you can't afford to guess wrong."

According to Mike Kahn, CEO of the Clipper Group (Wellesley, Mass.), a research firm, the information provided by SOLVE: Operations answers the question: "What does this mean to my business and what should I do about it?" SOLVE: Operations was initially created in a mainframe environment, typically with MVS running over SNA networks.

With the OpenView and NetView integration, it can extend mainframe reliability as well as provide end-to-end management to distributed client-server environments. "It offers to UNIX corporations what was available for the S/390s," says Kahn, "and allows the S/390 to be

viewed from the open side."

Sterling Software, founded in 1981, currently has 2,600 employees in 70 offices worldwide. And now, as an OpenView Premier Solutions Partner, they provide SOLVE: Operations for HP IT/Operations. They also work closely with Tivoli to provide SOLVE: Operations for NetView.

According to Lafferty, SOLVE: Operations is not a replacement for other currently available management packages, and is not a diagnostic tool.

In fact, Lafferty cites BMC's Patrol and Cisco-Works Blue as complementary products. Kahn likens this network management scenario to a medical exam. "Doctor's still need to diagnose the situation. And the specialists still need all the facts. It just makes their job easier if they don't have to go down to the bottom level every time."

Kahn also believes more companies will follow the path that Sterling has taken. "The challenge is not to manage a network, but to be able to manage a business," concludes Kahn.

—Deborah Schwartz,
Associate Editor

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As software developers got sick of being blamed for many contractors' lack of skills, and the consequent revenue loss, they developed their own certification programs.

Certification consists of taking tests developed by the manufacturer and administered by an independent firm, usually Sylvan Prometric. To take a test, call the testing firm and schedule a time and location. When you arrive at the test site bring two forms of ID, including one with a photo. Yes, they're serious. Sylvan currently charges \$100 to take a Microsoft certification test.

Certification has some obvious benefits. A developer has access to more technical information and can recommend certified people to customers. The certified person can claim they know more than those not certified. And for the customer, there is a level of assurance that the job will be done correctly.

Microsoft offers four types of technical certification: Certified Product Specialist, Certified Systems Engineer, Certified Solution Developer and Certified Trainer.

The Certified Product Specialist certification is for people who want to demonstrate competence on a particular Microsoft operating system. Tests are offered on NT Server and Workstation (4.0 and 3.51), Windows for Workgroups 3.11, Windows 95, Windows 3.1, and Windows Operating Systems and Services Architecture (WOSSA). Warning: A person only has to pass one of these tests to qualify as a Microsoft Product Specialist (MCP). If someone represents themselves as an MCP, be sure to ask which OS test they've passed.

The Certified Systems Engineer (MCSE)

certification is a series of six tests designed to show competence for a range of Microsoft environments. There are two tracks offered for MCSE certification, the NT 3.51 track and the NT 4.0 track. If you are just starting, take the NT 4.0 track as you won't have to re-certify for a while. The four required core tests for 4.0 include a desktop OS (choose Windows 3.1, Windows 95 or NT Workstation), two server tests (NT Server and NT Server enterprise) and a basic networking test. Two elective tests including TCP/IP, MS Exchange, SQL Server or Internet Information Server, are also required.

The Certified Solution Developer (MCSD) certification shows proficiency with software development using Microsoft products. There are four exams. The two core exams are WOSSA I and II. The electives include tests about Visual Basic programming, SQL Server, C++ foundation or Access development.

Finally, a Certified Trainer (MCT) certification is for instructors at authorized training centers. MCTs are required to prove their ability to teach, pass the relevant Microsoft test and use the relevant Microsoft training material for their course.

Certification helps insure a proficiency. But remember, it's not a guarantee that the certified person is a genius, only that they have demonstrated a respectable level of knowledge, as defined by the test.

— *Ryan Maley is a MCSE and the information systems manager for a midwestern manufacturing company. He can be reached at rjmaley@mcs.net.*

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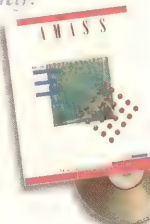
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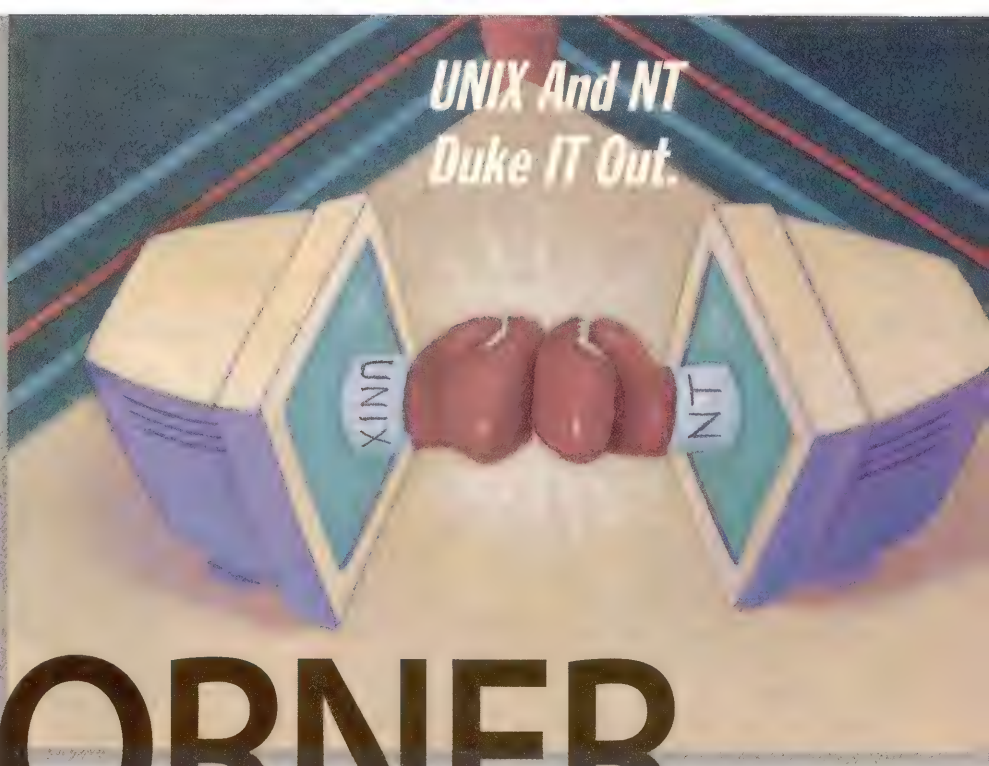


In

This

CORNER

UNIX And NT
Duke IT Out.



What used to be a crowded field of network operating systems (NOS) players, including IBM's OS/2, Novell's NetWare, Banyan's VINES and dozens of smaller UNIX flavors, will soon become a major market share battle between the booming popularity of Windows NT as a file, print and application server and the continued strength of high-profile UNIX flavors such as HP-UX, Sun Solaris and IBM AIX as enterprisewide and data-intensive platforms.

And when the final bell rings, it is likely that both NT and UNIX will be left standing, each with its respective strengths intact. The task for the referees in this fight — IT managers — will not be so much to declare a winner, as it will be to find the proper integration of UNIX and NT within their multi-enterprise.

First, the numbers. In a recent survey of 50 IT managers at Fortune 1000 companies, Forrester Research (Cambridge, Mass.) found NT shipments at less than one-third of UNIX shipments (2,780 for NT against 11,342 for UNIX) in 1996. By 1998, NT will rise to more than half of UNIX (6,065 for NT against 10,072 for UNIX), and by the year 2000, will more than double the UNIX units shipped. Forrester further predicts that revenue for NT units shipped in the year 2000 will be at \$20.2 billion, eclipsing UNIX revenues of about \$16 billion.

The NT assault is even more threatening to

James R. Dukart

NetWare and OS/2; Forrester predicts that by 1998, NetWare shipments will drop to one-fifth of their current level and hold less than 10 percent of market share, while OS/2 will be gone — at 0 servers.

Numbers from IDC (Framingham, Mass.) show much the same story. In terms of Web servers, IDC indicates that the 1995 market is comprised of 15 percent NT, 62 percent UNIX and 23 percent "other," which includes NetWare and OS/2. By 2000, the report says these numbers will essentially be reversed, with the market comprised of 65 percent NT, 25 percent UNIX and 10 percent other. The Gartner Group (Stamford, Conn.) similarly estimates that while NT server growth will gallop at a healthy 40 percent annually between now and the year 2000, the growth rate for UNIX and other operating systems will be flat.

FIGHT NIGHT

Thus, analysts and observers appear united on the fact that NT is growing, and growing fast enough to take a healthy bite out of the UNIX market. But it may be a bit early for a post-mortem on UNIX.

For instance, IDC's figures also show that end-user spending for UNIX systems will still outpace NT end-user spending in the year 2000 by almost 2 to 1, even as total NT units shipped eclipse UNIX. This is because UNIX will continue to dominate the high-end (and higher cost) arena of enterprisewide or data-intensive applications such as data warehousing, while NT will dominate the low-end file, print and application servers market. "NT will handle most low-end applications while UNIX cranks on big systems," says Jon Oltsik, Forrester Research industry analyst and author of Forrester's report. "Marginal players are being eliminated."

Laurie McCabe, industry analyst for Summit Strategies (Boston, Mass.), agrees. "For workgroup, departmental and midrange computing as well as low end, NT is it," McCabe says. "In an enterprise kind of application, like data warehousing, with huge amounts of data or huge amounts of transactions, you need UNIX. So it all depends on the types of applications and the type of work you need the server to do. Most vendors are now trying to make sure UNIX and NT integrate, because most enterprises now and in the future probably need both low-end and higher-end functionality."

HP is a prime example of a vendor embracing the NT/UNIX integration strategy. In March, HP unveiled its Colliance Program, an initiative dedicated to the integration of HP's flavor of UNIX (HP-UX) and NT (see *Chasing Rabbits* sidebar, pg. 36).

John Verrochi, product manager for HP-UX in HP's Enterprise Systems Division, says the Colliance program will help measure IT department needs against the characteristics of the competing technologies. Verrochi says IT departments must factor in not only enterprise needs, but also the IT infrastructure and what it will be able to handle.

"Which way should you go? As a lawyer will typically say, it all depends," Verrochi says. "If you need higher performance and scalability, UNIX has a stronger lead. On the security front, HP-UX is more secure

by virtue of B1 and C2 certifications. On the applications front, breadth of applications is important and NT may have the lead. It depends on your needs and your capabilities."

ROUND 1

COME OUT SWINGING

HP throughput tests show that at its highest performance point an HP 9000 T-class or K-class server with UNIX can handle seven or eight times the throughput of an E30/E40 or LD Pro NetServer with NT. In addition, UNIX is already running in 64-bit processing mode on Digital's Alpha servers while NT remains in 32-bit mode. Sixty-four bit mode means not only increased bus and I/O speeds, but also faster processing by increasing the amount of directly addressable memory from 2GB in 32-bit systems to 16 or 18GB in 64-bit processing.

These performance measures are important for large-scale data processing functions and are part of the reason UNIX has dominated the high-end server market. But Microsoft has announced plans to develop NT support for 64-bit processing to coincide with Intel's development of the 64-bit Merced chip. Though this capability may not be available until late 1998 or later, 64-bit processing could move NT aggressively upstream in the performance category.

The scalability of UNIX versus NT is another important issue. The key is to provide adequate symmetric multiprocessor support (SMP), effectively allowing a server to run on any of a number of CPUs connected via a high-speed data bus. This also is often referred to as "clustering."

In addition to boosting output, clustering provides failover protection, meaning the server can continue operation even in the event of a specific CPU failure. Each additional CPU in the system can increase system performance anywhere from 50 percent to

90 percent, depending on the efficiency of system hardware and software. Most UNIX variants currently deliver strong SMP support for up to 12 CPUs, while NT has not been proven to be effective beyond two to four CPUs. Microsoft's current beta release of its clustering technology for NT (code named Wolfpack), for instance, is limited to four-processor SMP support with two-node failover.

Of course, performance benchmarks and scalability will change for NT and UNIX as hardware and software continues to develop and be deployed. Moreover, with NT market-share growing so strongly, few doubt that vendors will aggressively move to provide products and services to boost NT's scalability and performance. In addition, increased enterprise-level deployment of servers for multimedia databases and Web servers will drive the demand for a faster and more robust NT.

Which means it all leads back to IT shops determining what applications they want to run and how they want to run them, and then looking at the capabilities of a UNIX or NT-based solution. Cecilia Margevicius, business alliance manager for Enterprise NetServer Operations at HP, says companies need to focus on their needs rather than on the promises of vendors for various performance levels. "It's really a leap-frog type of thing, and it continues to evolve," says Margevicius. "I get a little bit concerned about saying the performance of one server is better than the other."

ROUND 5

THE OLD ONE, TWO

Even if performance factors and scalability favor UNIX, NT has some significant advantages that contribute to analysts' rosy predictions for its future. Among the primary ones are ease of use and the growing number of applications specifically being written for it.



Consumer familiarity with the Windows interface is a big plus to Microsoft in terms of NT spreading throughout the enterprise.

On the UNIX side, companies have cropped up to create common user interfaces that spread across various UNIX flavors. "UNIX does multiuser, multitasking very efficiently, but not always as intuitively," explains Richard Van Dyke, vice president for Xi Graphics (Denver, Colo.), which markets a common user interface for UNIX called Common Desktop Environment (CDE). "On the NT side, you have a common user interface, and that helps a lot. My 5-year-old son can run the Windows interface. He knows enough to go up and click on the OK button, even though he can't read yet. CDE is an attempt to provide the common look-and-feel of Windows without sacrificing the multitasking multiuser functionality of UNIX."

Summit Strategies' McCabe says this user familiarity with Windows — and

therefore comfort level with the NT interface — results in lowered costs of training and support. "Lowered costs of Intel architecture and lack of additional training costs to add NT servers gets you in cheaper," adds McCabe. "For the low-end and midrange working with department applications, NT is the choice."

ROUND 10 TECHNICAL KNOCK OUT

Another factor working in NT's favor is the availability of applications being written specifically for it. In what the Gartner Group refers to as the "Virtuous Circle of ISV Enthusiasm," Microsoft and Intel's sheer market penetration on the PC side leads to continued vendor enthusiasm to write applications for NT.

Analyst reports that show NT

already overtaking NetWare and soon overtaking UNIX will only add fuel to the Redmond-based fire. As the Gartner Group explains it, users buy applications that are written for a dominant OS — in this case, NT. That leads to more application developers writing for NT, which in turn increases the applications available for NT, bringing in more NT users and resulting in the self-perpetuating virtuous circle.

"Anybody who is writing for the mass or middle market is obviously writing for NT," says Russ McBrien, Colliance services manager for HP's Professional Services Organization, a group of 200-some consultants who deal with NT/UNIX integration issues. "If they don't have high-end performance or high-end implementation requirements, they will only write for NT. And they are probably smart to do so."

The pressure is on UNIX vendors, McBrien says, to maintain and increase the value of their platform, which he

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UNIX vs. NT

says will continue to reside in the high-end and enterprisewide applications.

McBrien cites the Hong Kong Police Force (HKPF) as a prime example. The HKPF deploys more than 5,000 PCs in 70 sites throughout Hong Kong, tied into 80 NT servers and rolled up to 150 different specialized UNIX-based processors.

McBrien says the HKPF uses the

NT servers for file and print management and as distribution points, but that the main application processing takes place on the UNIX boxes. He calls it a total solution for the Force, giving them affordable access at the local level with

Companies need to focus on their needs rather than on the promises of vendors for various performance levels.

high levels of processing capability, scalability and security at the higher end.

In addition, ISVs who want to port their applications to UNIX are faced

with the reality that while there is only one NT platform, there are several competing UNIX platforms. The costs of writing to several different flavors of UNIX will lead to increasing concentration of efforts on the part of ISVs to write to only the strongest UNIX vendors such as HP-UX, Sun Solaris and IBM AIX. "If you are an ISV and you know that 50 percent of the market is NT, and 10 percent is HP-UX and 3 percent is this and 4 percent is that, you don't have enough marketing dollars and development dollars to write all these flavors," says McCabe. "I am definitely getting the sense that ISVs are going with the top three or four versions of UNIX."

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ROUND 15 SPLIT DECISIONS

So where does all this leave IT professionals trying to decide whether to deploy NT or UNIX? Analysts and integration professionals seem to agree that though the NT juggernaut is unstoppable on the low-end and as an application, print and file server, UNIX will continue to exist and may even thrive as a high-end platform. This will require that companies be able to integrate NT and UNIX within one environment. Stick around. There are sure to be several rematches.

—James Dukart is a writer and business analyst with the Washington News Bureau.



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Hosting databases, large data repositories and shared resources has always been one of the strengths of UNIX, therefore HP 9000 HP-UX systems, including the workstations, tend to be most useful as servers. On the other hand, by now, most end users are familiar with the Windows interface, and are adept at navigating among applications — the recent switch from Windows 3.1 to Windows 95 notwithstanding. But despite the hype and some technological advances made by Microsoft and other traditional database and server vendors, most IS managers don't yet consider Windows as the foundation for industrial strength "back office" computing. And not many end users are camped in front of an HP-UX workstation all day long.

If it is your job to build a mixed platform that supports both Windows NT and HP-UX, you'll quickly find there are a number of ways to approach the problem.

FTP AND TELNET YOUR WAY TO SUCCESS

Windows NT now ships with a number of simple TCP/IP services including ftp, telnet and print services. This lets your NT systems fit in nicely with your existing UNIX servers, and provides limited access to UNIX services for Windows users. ftp and telnet clients are the most useful. For a good library of useful NT tools and applications, check out Beverly Hills Software at www.bhs.com. Also, for a good telnet client, check out Van Dyke Technologies Inc. at www.vandyke.com.

EXCHANGE NFS FOR SMB

HP-UX handles large numbers of large disk volumes and does so securely and quickly. NT has the beginnings of this capability, but your disk farm is probably hosted on an HP-UX server. You already know about NFS software that allows your Windows users to mount parts of the UNIX disk drives as local file systems. But then you also know that every brand of NFS requires a different server daemon running on UNIX; and you need full access to UNIX system files for exporting different volumes and drives. It's tough to maintain.

Wouldn't it be nice if you could find a way for your UNIX servers to look like any Microsoft server, so all the tools your users know how to use with Windows workgroups will work properly when the remote system happens to be UNIX based? Well, you can download Samba (visit ftp.samba.anu.edu.au, and check the

[/pub/samba/directory](http://pub/samba/directory)) public domain software from Australia, which makes your UNIX servers emulate Microsoft's Server Message Block (SMB) protocol.

Why would you give up NFS for Windows SMB technology? Ease of use is a start. Consistent user interface for your Windows users is another plus. And, licensing costs make the decision easy. You'll never have to worry about which versions of the NFS server daemon are running on which systems, or which export file you need to modify to give users access. As far as your end user is concerned, your UNIX disk drives are just part of the NT network. So, you're saying what about support? If you check the Samba ftp site, you'll find a file called Support.txt which lists several companies that provide commercial technical support for Samba.

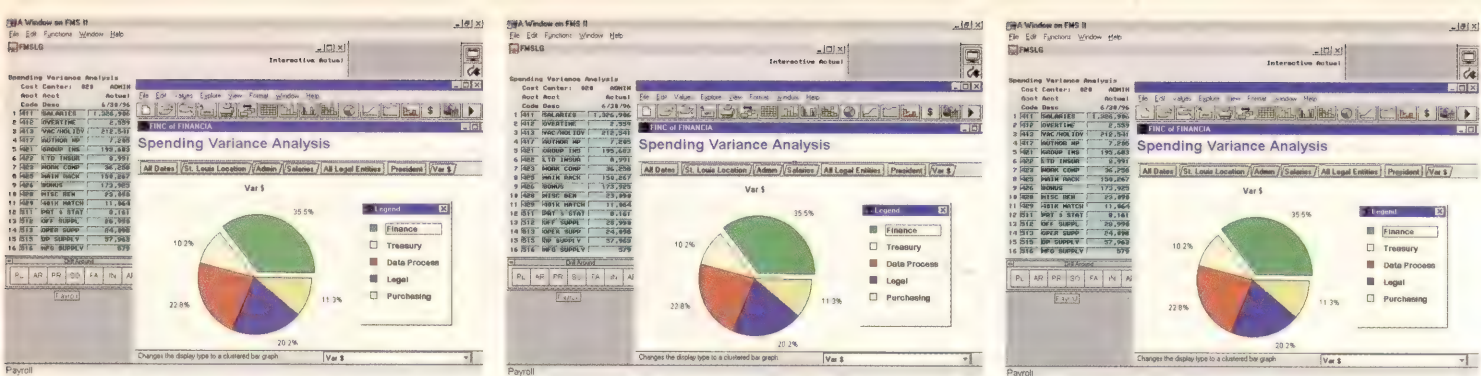
UNIX UTILITIES FOR WINDOWS

Those of you who have a staff of developers who love their UNIX utilities and tools may want to look at the MKS Toolkit 5.2, a suite of development products available from Mortice Kern Systems (MKS; San Francisco, Calif.). They have a full set of all the UNIX utilities (e.g., vi, sed, awk, grep, sort, as well as hooks for cc, the UNIX C compiler to invoke Borland or Microsoft C++) that transforms NT programming platforms into UNIX workstations while providing developers with Windows-specific commands and integration.

Unlike other PC-based utilities, this allows corporate developers to leverage their existing UNIX training, UNIX scripts, tool familiarity and skills. If your background has been primarily Windows-based, you'll probably find the MKS toolkit necessary on Windows NT development systems. You can find information about MKS Toolkit at www.mks.com.

How you combine UNIX and Windows NT platforms into a single computing network depends on what you are doing now, and on where you want your users and developers to spend most of their time. It may also depend on what kind of background your IS people have. The tools I've described will help ease the pain of integrating HP-UX and other versions of UNIX with Windows NT — a platform that will likely be a big part of your future.

—*Miles Kehoe is the president of New Idea Engineering, a Silicon Valley-based Web and intranet consulting and training company. He can be reached at mbk@ideaeng.com.*



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*Securing The HP-UX/NT
Enterprise Or
Reducing Risk To An
Acceptable Level*

Through the Looking Glass-House

Developers and IS managers exploring UNIX-to-Windows NT integration may find themselves falling through a deep dark well into a world where "so many out-of-the-way things happen." And like little lost Alice, they may wonder if "very few things indeed are really impossible," especially when it comes to network security.

As enterprise security becomes increasingly complex, it's apparent that developers spend more time developing application security code, and administrators have the increasingly difficult task of keeping the various application security mechanisms in place across the enterprise. Because of this complexity, mistakes are often made and fraud may be perpetrated, costing companies millions of dollars. Security issues are further complicated when multiple operating systems, such as HP-UX and Windows NT, are involved.

Security remains one of the top HP-UX/NT interoperability issues HP continues to address. In fact, HP's



Pete Johnson

Worldwide Customer Support Operations' (WCSO) Advanced Systems Lab formed the Interoperability Engineering Center (IEC). Established in 1996, the IEC provides multiple HP divisions with non-biased technical information, training and tools which allow HP consultants and engineers to architect, design, implement, manage and support NetServer/BackOffice and NT/UNIX configurations.

WHO RRRRRRRRRR YOU?

Security can be segmented into the following areas, each essential for completing the HP-UX/NT enterprise: single sign-on authentication, cross-

platform application authorization, data protection and non-repudiation.

Single sign-on authentication. A user proves who they are one time during the computing session. Authentication can be as simple as a password or as complex as biometrics (for example, a thumbprint). Making users go through authentication once is referred to as single sign-on or single log-on. This becomes increasingly more important in multiplatform environments, when making the presence of several operating systems transparent to the end user.

Cross-platform application authorization. This level addresses what users are allowed to do with the system once authenticated. Authori-

zation can be viewed in two ways: from a resource-based position (Who can access a particular resource?), or from a role-based perspective (Are accountants allowed to access? Which transactions can they execute?). Authorization gives administrators the power to restrict access to data or transactions for some set of users, while allowing access to privileged users.

Data protection. Data protection keeps data secret and immune from break-ins. This is accomplished using cryptographic algorithms, which incorporate such devices as check sums. Data protection often becomes complicated when dealing with government regulations.

Non-repudiation. This level of security undeniably determines who sent a message long after it has been sent. For example, a certain amount of money is authorized to be transmitted by a certain user. At a later date, a system administrator could confirm the user who performed the transaction.

CURIOUSER AND CURIOUSER!

Common resources in many computing environments include file and print sharing, messaging and client-server applications. Although these capabilities are intended to provide more functionality and ease-of-operation, often times end users are required to enter a different username/password for each specific service. This not only creates more work, but can result in lost productivity or limited use of some computing resources if users forget the password or have difficulty with authentication. This also creates a problem for the system administrator who has to manage multiple user databases.

The obvious solution is to provide users with a single sign-on; users identify themselves once and have access to all resources across the enterprise. Sounds simple enough. It becomes complicated, however, when multiple hardware platforms are introduced.

Parts of the single sign-on solution are currently available. For simple file and print server environments, two products used in conjunction, one on

CHASING RABBITS

"UNIX and NT is what we can deliver to customers." Does it get any clearer? In early March, with those words, HP introduced the Colliance Program to do just that. Colliance is HP's attempt to bring a "definite, renewed emphasis on ensuring that the NT platform is adequately serviced within the client-server space," says Russ McBrien, HP's worldwide program manager with the Wintel and UNIX Integration Program.

The Colliance Program is intended to be a three-tiered approach: services, technologies and HP partners are provided to IT organizations in the financial services, manufacturing and telecom industries. Services include consulting and education available from HP's Professional Services Organization (PSO), as well as customer support from HP's Worldwide Support Organization (WCSO). Technology areas include management, security, messaging, application development, connectivity and the Internet.

As part of the Colliance Program introduction, HP also announced that Novell's basic NetWare Directory Service (NDS) will be bundled with HP-UX 10.20. "It will help customers integrate a large systems environment across multiple physical domains," says David Birnbaum, program manager for HP's Colliance Program. NDS also is compatible with Netscape's Lightweight Directory Access Protocol (LDAP), so that will help those with Internet integration problems. "It's available to our installed base of HP-UX 10.20 users and free of charge on a retroactive basis," says Birnbaum. That's fine for Novell and HP-UX users. But what about NT you might ask? "Novell plans to have NDS capabilities running on NT before the end of the calendar year."

— George A. Thompson, Senior Editor



HP-UX and one on NT, can provide users with an answer to the multiple authentication problem. For more complex environments, the Praesidium/Single Sign-On (P/SSO) provides single sign-on to the operating system, file and print services, and applications.

For a simple file and print server environment, multiplatform single sign-on is available through HP's Advanced Server/9000 (AS/9000) and

security services and systems management products with third-party technologies.

A CAUCUS-RACE AND A LONG TALE

In the future, usernames and passwords will be replaced by smart cards. Users can use either a smart card containing user information or an image of a smart card, also called a soft card, stored on a file called the key package. This key package holds the user certificate and encryption keys. The smart and soft cards are collectively called personal security devices

(PSD). Users will use the smart card together with a personal identification number (PIN) to log onto their computer system much the same way as bank customers use ATM cards to access savings and checking accounts.

HP plans to combine Microsoft's Zero Administration Windows (ZAW) with smart card-enabled HP Vectra PCs and NetPCs in order to enhance security and provide more flexible use of Windows-based computers.

Authorization determines the access privileges that users or applications have to specific resources such as a database, a column in a table or another application. Today, this type of security control typically resides in one of two places. It is either hard-coded inside an application, or located at the target resource. While both are effective for some types of environments, neither provides the level of flexibility required for today's distributed and complex HP-UX and NT security requirements.

When authorization is performed at the target resource, such as a database, the resource assigns users with access privileges to particular tables or columns. This approach is fine if only simple authorization rules are necessary. For example, the sales rep can have full access to the sales tables. If the company has only one database, this type of authorization provides centralized control and easy administration of user privileges.

"But it's no use now, to pretend to be two people! Why, there's hardly enough left to make one respectable person!"

any one of several Network File System (NFS) servers for NT. Used in conjunction, end users can have the same username and password for HP-UX and NT machines, and have access to the same files and printers in either environment.

The HP AS/9000 running on HP-UX appears as a Primary Domain Controller or Backup Domain Controller to all computers in an NT network. To an NT server, however, it appears to be a Backup Domain Controller functioning as a Server Manager. Likewise, using an NFS server, users logged on to an HP-UX machine can have access to files and printers on an NT machine.

File and print sharing is one of the many situations where authentication is needed in an enterprise. Messaging and client-server applications are other places where end users might need to identify themselves.

The single sign-on module for the HP P/SSO, which works across both HP-UX and NT, helps unite many applications under a single authentication umbrella. P/SSO enables users to securely sign on to a local system once to access multiple information resources, including databases (Oracle and Sybase), applications (customized and legacy) and networks (NetWare, LAN Manager, Advance Servers) on PCs, UNIX servers and mainframes. P/SSO integrates HP Praesidium secu-

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CIRCLE 123 ON READER CARD

The problem is that resource-based authorization is limited in its ability to provide granular levels of authorization to individual users or groups of users. A user can have either "yes" or "no" access to a function or a resource, but there is no idea of range. For example, you can grant all sales reps full access to the sale tables, but you can't restrict a junior sales rep to only make transactions under \$10,000.

On the other hand, authorization that is determined at the application level provides a high degree of granularity and control. For example, the security portion of NT's Win32 API enables developers to create their own security objects that their application can manage. In fact, most application security today is implemented as part of the programming effort.

The problem here is that the security logic must be programmed into each application. This is an extremely time-consuming, inefficient and error-prone process for developers. As a result, security from application to application generally varies based on each developer's skill level and knowledge of the security policy. And when an organization's policy changes, the security code on each application needs to be changed.

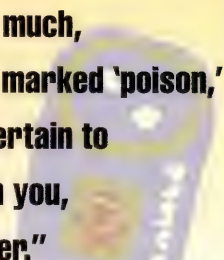
WHEN YOU'RE 10 FEET TALL

The Praesidium Authorization Server (P/AS), which runs on HP-UX and Windows systems, provides end-to-end (i.e., desktop/laptop to server) security for the Internet, intranet and enterprise, as well as secure centralized management of security. P/AS addresses the growing complexities in managing access to information resources and disparate systems.

P/AS provides a common security service which can be used to centrally define, control and administer authorization rules and individual access privileges across many different applications and operating systems. This centralization reduces the likelihood of errors or inconsistencies in security programming, user privileges and application maintenance.

For the developer, P/AS removes

**"If you drink much,
from a bottle marked 'poison,'
it is almost certain to
disagree with you,
sooner or later."**



security processing from the application logic and onto a centralized repository. Authorization rules can be written once and used across all applications through a consistent API.

P/AS also allows security policies to be maintained centrally through a common Web browser. Rather than dealing with each application subsystem and its security component separately through a different tool, P/AS offers administrators a consistent view of users, groups of users and privileges for each application. Modifications or new entries can be administered in a central place and executed quickly. For the policy setter, P/AS provides a way of grouping privileges to establish common access rights for sets of users.

THE ANTIPATHIES, I THINK...

Computer data is nothing more than a series of ones and zeros, which lends itself to mathematical manipulation — the basis for cryptography. Modern cryptography algorithms take two pieces of input, a mathematical representation of the data and some other large number known as a key. It then produces output data that cannot be understood unless manipulated again to return the data to its original state.

At the heart of cryptography is the ability to scramble the data mathematically and reassemble it later. In its encrypted state, the data is protected from anyone without the means to decrypt it. Some kinds of data, such as that used by military contractors in product design, is of particular interest to the federal government. In fact, U.S. export laws treat encryption technology the same as weapons and munitions.

Other governments place restrictions on the complexity of the mathematical manipulation or on the length of

the key (larger keys typically produce better protected data) that can be used so that law enforcement can intercept and decrypt electronic data in much the same way that phone lines are "tapped." Due to the sensitivity of this technology, great burdens are placed on developers creating different versions of their applications that require data protection based on where the application will be used. The variety of laws, as well as the fact that not all encryption APIs are supported on all platforms, can make data protection especially difficult to enable.

WHITE KNIGHTS TALKING BACKWARDS

The International Cryptography Framework (ICF) provides HP with an architecture that solves international export and cross-platform problems. Supported by the governments of the United Kingdom, France and the United States, ICF integrates into Praesidium providing a single solution where developers can imbed data protection into their applications without regard to the country the application will run in or what international borders the data may cross.

Initially, ICF incorporates Microsoft's Cryptographic Application Programming Interface (CryptoAPI or CAPI), enabling developers of Windows 95 and Windows NT products to use ICF cryptographic functions.

When the U.S. Postal Service receives a letter to be sent to another location, the letter receives a postmark. Besides validating that the postage has been paid, the postmark also includes the date that the letter started its journey and the originating distribution center. When reaching its final destination, the recipient has proof of where the letter came from and when it was sent.

Non-repudiation is basically the same concept, but with electronic messages instead of paper ones. In certain business situations, it is necessary to validate that data received came from a specific source and that the data was not substituted by some other party while the message was in transit.

HP already enables non-repudiation via digital signature technology across all platforms currently supporting HP OpenMail.

WHO STOLE THE TARTS?

Businesses implementing NT servers and PCs into their HP-UX environments also are concerned about how their systems can be effectively managed and supported as a single integrated environment without finger pointing between support vendors.

The HP Colliance Program, announced in March (see *Chasing Rabbits* sidebar, pg. 36), provides products and consulting, education and scalable support services for integrated and interoperable UNIX system and Windows NT environments.

Overall, HP has positioned itself to deliver HP-UX/NT security solutions for all parts of the security model. With the support of industry leaders and several governments, ICF has the potential to be a standard method of enforcing cryptography laws. Praesidium offers a standard method for application developers to authorize viewing of selected data or access to certain transactions based on a centrally managed profile. Where poor Alice "generally gave herself very good advice though she very seldom followed it," HP's security strategy for mixed HP-UX/NT environments addresses user needs in both the Internet and intranet environments, environments which for most "respectable" IS managers will soon find themselves responsible.

Would you like to continue to see articles on this topic?
Circle on reader card yes 348 • no 347

About the Author

Pete Johnson is a software engineer within HP's WCSO Advanced Systems Lab. He researches and develops solutions focused on making HP-UX and Windows NT work together in mixed environments. He is also a Microsoft Certified Engineer. He can be reached at johnsonp@mayfield.hp.com.

Backup, restore and archive process have become a central issue in network management. The amount of data generated in networks is exploding at an average rate of 50% or more per year while the value of this data is continuing to increase dramatically. More distributed network environments are implementing Hierarchical Storage Management programs to help automate file management and save valuable magnetic disc space. On a typical network, 75% of the files stored have not been accessed within 30 days.

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CIRCLE 120 ON READER CARD

Another History

I got some mail that raised several interesting questions regarding my April UNIX At Large column on the subject of shell history. You might have been wondering the same thing, so I thought I would share a few of the responses:

From Thomas Glen Smith, Senior Software Specialist:

You missed a few spots when changing hostnames. In addition to `/etc/hosts`, `/var/adm/inetd.sec` and `/etc/rc.config.d/netconf`, you also need to change: `/etc/shutdown.allow` — if you don't, the next time you attempt to shutdown your system, you'll get a "sorry, you're not authorized" message; and `/etc/mail/sendmail.cf` — without this change, you'll be missing your mail.

Also, I've always used the `hostname` command, not `uname -S`. The man page for `uname` says the `-S` is for uucp-related programs, which we rarely use.

By the way, do you have any idea why HP restricts host names to eight characters? No other flavor of UNIX that I've worked with has this restriction. It's especially irksome right now for me, because I'm in the process of replacing a Digital Ultrix system with HP-UX, and the host name is "gatekeeper." I'm going to try an official hostname of "gatekeep" with an alias of "gatekeeper," but don't know for sure it'll work.

Fred responds: I think you missed this sentence at the end: "There could be many more locations if a system has applications, (or system services) configured."

This includes `shutdown.allow`, as it is shipped empty (only root) and must be configured if you want it used. Sendmail, license servers, etc., all can have `hostname` configured into them, though I try to use `hostname` wherever possible to prevent this issue from arising.

The issue I was trying to address was that system name and host name must be the same, and that just issuing "hostname" to change it does not cut it, as many things will break in HP-UX 10 (like `swinstall`) if they do not match. The man page was correct, `uname` sets the system name, not the hostname.

Though the information about looking up max host name length is correct, the real issue was with SAM and other HP tools not accepting `hostname` arguments

longer than eight characters. Even when the kernel parameter is set correctly. I guess HP does not want us replacing DEC boxes with HP boxes.

From George Morrison, Technical Analyst: Shame on you! You flunked the `cd` example about re-executing a previous command with a change. Your example suggested that you change:

```
cd /opt/gnu/app-defaults
vi some-config-file
```

to

```
cd /opt/gnu-emacs/app-defaults
vi some-config-file
```

with `cd` required

```
!-2:p ^u^u-emacs
!vi
```

Also, I take exception to your comment: "This is not quite as easy in the C shell...." If you use the `:s` variant, it is as easy as `ksh` (or easier, depending on your viewpoint). Here is the simpler `cd` commands:

```
!-2:s/u/u-emacs/
!vi
```

Of course, as with other shells, the two commands could be tied into one:

```
!-2:s/u/u-emacs/; !vi
```

The `:s` variant, as you might have guessed, is (almost) syntactically equivalent to the `vi` substitute command. It will find the first occurrence of the string after the first `/` with string after the second `/`. As with `vi`, if you want to substitute all occurrences of `str1` with `str2`, you use a global qualifier. Unlike `vi` etc., the `g` comes before the substitute command, not after.

```
cd /opt/gnu; vi gnu.cfg
!!:gs/gnu/gnu-emacs/
```

which results in `cd` to `/opt/gnu-emacs` and `vi` loading

Lesson

By Fred Mallett

*gnu-emacs.cfg. Unfortunately, **g** qualifier still is limited to one change per word, so*

```
cd /opt/gnu/gnu
!!gs/gnu/gnu-emacs
```

results in

```
cd /opt/gnu-emacs/gnu.
```

*the same as if the **g** qualifier had been omitted.*

```
cd /opt/cdrom
!!gs/cd/xc
```

Fred responds: I disagree with your first point. The article was about simple replace functions, not the submodifier. But, of course, the submodifier will also work. The print modifier should have been on a separate line from the replace character. I did not write that you required the ^ method of history to perform this fix. However, you have pointed out a substitute method (which as you know, has nine modifiers).

As for the C shell comment: If you used the tcsh it would be even easier still, just use the up-arrow. I used this: **!-2:p;^u^u-emacs** because we were covering ^ not :s. In the ksh, I used this: **r u=u-emacs -2** There are four less characters in the korn shell version.

Your suggestion of

```
cd /opt/gnu-emacs/gnu.
```

would have been easier written as:

```
cd /opt/gnu/gnu
!!:s/gnu/&-emacs
```

On omitting the **g** qualifier:

This is due to the fact that the csh history does not store spaces. The command is stored after parsing into words, so this is where the global substitute has effect (globally across one word), it seems many people misunderstand the meaning of **:g**, consider **thiis thiis** would be changed to **thxiis thiis** by executing the history command* of **:s/i/x**. But the **:gs/i/x** command (global means act on each word) would result in **thxiis thxis**.

On most csh versions, you can append a trailing modifier to repeat substitutions (all occurrences of all words): so, again, starting with **thiis thiis** before each of these substitutes:

:gs/i/x/:& results in **thxxis thxis** (repeated the first one twice)

:gs/i/x/:g& results in **thxxis thxxs** (repeated all subs twice)

:gs/i/x/:g&:g& you can guess what this results in.

So, you can see that the csh global flag means act on all words, and the **&** means repeat the last sub. And there really is no "perform all substitutions in all words" command if you don't know how many of each string there is (there is one in other shells). (Be aware that some csh versions let **:gs/x/y/:&** act truly globally!!)

On

```
cd /opt/gnu/gnu
!!:gs/gnu/gnu-emacs
```

This is due to normal function of the **g** modifier. There was only one word with **gnu** in it, so only one sub was performed. There needs to be more than one word with the substitute string for **g** to work:

```
cd /opt/cdrom
!!gs/cd/xc
```

results in **xc /opt/xcrom**

In your example

```
cd /opt/gnu/gnu
!!:s/gnu/&-emacs
```

!!:s/gnu/gnu-emacs/:& would have resulted in **cd/opt/gnu-emacs/gnu-emacs**.

From Robert J. Beck Jr., UNIX Systems Administrator:

Your command history was very informative, even for someone who usually uses command recall. Your examples of substitution for **/usr/lib/X11/lfonts** resulted in **/usr/xlib/X11/lfonts** in both cases for me. Shouldn't the correct substitution be **r 1/11/xl**? Otherwise it still substitutes the first **l**.

Fred responds: You are absolutely correct! Either **r 1/11/xl** or **r ls=3Dxls** would be needed to force the substitution to the second **l** in the string.



The Gifts Of The Gab

When you return from a conference, there are usually millions of tasks that were neglected while you were gone.

We tend to jump back into the fray and forget all the things we just learned. At this time of year, InterWorks members like myself (and some of you) are just getting over returning from the annual InterWorks Conference in Philadelphia, Pa. It's kind of like Christmas when you were a child. There are lots of presents, but you can't remember them all. Forget the little stuffed animals and juggling balls from the vendor arcade and System Admin extension day. I'm talking about the true gifts — the gifts of knowledge.

So, rather than delve into all the technical tidbits that I gathered (I'll save those for a later column), I'm going to point out some of the gifts of knowledge I learned while at InterWorks.

In Michael Lampi's (of MDL Corp.) *Wizards Session*, there are always many great fixes that come from telling "war stories." They prevent others from following your erroneous path, and pose tough problems for the collective mind of the group to solve. This year, over and over, people kept describing problems and stating that they used SAM to set up the service that was giving them problems.

Most often, the fix was to set up the service manually instead of using SAM. This led the group to decide to request a new patch from HP — one that would remove SAM. This got a good laugh. It raised an interesting point though. And the majority of the "wiz-

ards" there agreed that you should do simple tasks manually, and only use SAM for the complex tasks or tasks that are outside your knowledge range, which is why SAM was written.

THREE, THREE SCREENS IN ONE

One of the big hits in HP's Technical Lab (a showcase for HP technologies) was the Single Logical Screen (SLS) demonstration. All you need is a workstation that can support multiple graphic controllers, each with a display (it works best if all the controllers are the same type). It is rather amusing to move windows from screen to screen, or have a window wide enough to span multiple displays. Support for this is in X Windows, just the extra hardware is needed. The purpose of using multiple screens is to get extra screen real estate. You can have more or bigger windows all displayed at once. They had three, displays all acting as one.

If you use multiple displays with the typical X "multiscreen" setup, that is, **DISPLAY:0.0** and **DISPLAY:0.1**, you cannot move windows between monitors or have a window span displays. By editing the `/usr/lib/X11/X0screens` file, you can set up for SLS. I will leave you to look up the details in the documentation, but here is a quick example. If I have two displays on a host, using the device files `crt` and `crt1`, and want them to be aligned side by side and act as one screen (i.e., as a sin-

gle logical screen), here is what I would put in my `/usr/lib/X11/X0screens` file (all other lines commented out):

```
SingleLogicalScreen 1 2
/dev/crt
/dev/crt1
```

The format of this file changes a bit in HP-UX 10.x, but the above example is the same for both. In HP-UX 10.x, SAM can perform this edit. HP has a Web site describing SLS at www.hp.com/go/xwindow.

IGNITE-UX

For larger sites, a new product has come out to aid in software installations. Note that I am about to use two words that may have never been in the same sentence before. This **PRODUCT** is **FREE**. It is called Ignite-UX. It is part of a larger free item called the Transition Toolkit. The reason for this product is that HP reeeeaally wants us all to go to 10.20. In fact, they want us there so bad, they are offering what I am calling an "Amnesty program." That is, even if you are not on software maintenance, you can still get 10.20. More information about this is available at the same location the Transition toolkit is available. Check out www.hp.com/OS_transition.

The Ignite-UX product allows many install features for which we have been asking. I have to admit that HP listens. Here are some of the capabilities that seemed like a gift to me: single command cold installs, multiple possible OS configurations, multiple target installs, multisource installs, configuration capture and push installs. You can even configure the tool to do different installs depending on the hardware configura-

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tion of the target (memory, disk, etc.). This is a great tool and well worth the time to look into it.

PATCH MANAGEMENT

Another gift came from JJ Urich, a computer consultant in Iowa. Yes, they have lots of computers in Iowa. In fact, at JJ's site, they don't have to worry as much about loading patches as many sites do. This is because JJ has developed a patch management system that is comparable to the one that HP only provides for those who buy a rather high level of software support. This tool will look at the HP Web site to see what patches are available, then develop a list of which patches you might need, depending on hardware and software version. From that list, it will develop a list of compatibility, and list out which patches need single user installs, kernel rebuilds or reboots.

This can help determine when to perform the installs. It does some compatibility checking to see if it looks like a patch might "undo" a prior patch, which has been known to happen. A couple more tools that he developed will install all selected patches in one command, then verify that they indeed were installed. If this sounds like it might simplify your life, the tools were donated as freeware, and are available from the InterWorks ftp site at [ftp.interworks.com](ftp://ftp.interworks.com). As the best gift, they even come with man pages.

—Fred was last seen talking to a school psychiatrist about confusing presents with detentions. He can be reached at frederm@aol.com.

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What A Tangled Enterprise Web We Conceive

What in the world is all the fuss about? Web-based Enterprise Management (WBEM) has a

lot of people excited. It's proponents say it will revolutionize the way network management is done. The naysayers are concerned that it's a TCP/IP-based service (we all know that's a slowly sinking ship). And those that are taking the middle of the road are wondering what it will do for them.

The WBEM feature everyone is talking about is the ability to review network management data from a Web browser. That's a stirring idea to network management technicians forced to stare at the same console all day. But there are other advantages. Chief among them in my mind is the ability of a network control center technician to review this same management data from home using a dial-up line (either through a local ISP or through a private corporate network access server), without the traffic overhead of an X Windows emulation package. This feature offers network managers and technicians something they will probably feel is a mixed blessing.

ATTRACTIVE TO THE OPPOSITE SEX

Although the net gurus may be able to avoid going to the office to fix an outage that could be averted or repaired, they will have their sleep disturbed more regularly by those executives who would require them to be there anyway. The pricing advantages of WBEM packages can't be ignored

either. The cost savings that can be realized from the purchase of a typical WBEM package over a legacy network management app like CiscoWorks, Spectrum or Optivity is staggering. The attractiveness of these packages doesn't stop with pricing. The kind of flexibility that exporting WBEM data to an intranet Web server, and subsequent organization of NM information into a hierarchy that makes sense to the "user sect," could seal the deal by itself.

Depending on the implementation of the WBEM by the vendor, other advantages can be realized as well. But more often than not, it will be an advantage offered through homogeneous devotion to a particular hardware vendor and their WBEM package. The disadvantages of WBEM include a lack of product maturity, and security concerns when management occurs across uncontrolled networks. There's also a lack of what I call the "pretty picture factor" — the underdeveloped, but rapidly maturing ability to present an HTML-formatted content that allows the user to dynamically interact within a Web page.

Currently Web surfers are somewhat limited in that more often than not they interact with a two-dimensional static display of information and graphics. Certainly the concept (were it readily available) of interacting with a network in three dimensions, perhaps with VRML renditions of topologies,

is exciting. But only time will tell if the maturity of the average WBEM product goes that far.

It's no small thing that WBEM will eventually have the ability to offer such things that legacy network management systems (NMS) platforms have not. Depending on what the future holds for HTML, WBEM's advancement in that arena is handcuffed to the standardized advancement of features in the HTML language. Another factor to consider when evaluating the relative advantages of WBEM software over traditional NMS packages is how to tie it into your helpdesk software.

HELPDESK SAVIOR

I think that WBEM could be one of the best things that ever happened to the helpdesk. Those poor souls who are forced to answer the phone and deal with those peek-and-poke computer users that just lost a network service will have increased access to critical information the average end user/caller normally wouldn't be able to provide when opening a trouble ticket. This could lead to an overall increase in productivity (dependent primarily on the depth of IP implementation within the organization), and faster response times to calls in the helpdesk queue.

Helpdesk technicians might now be able to solve a problem directly over the phone, where before they might have routed the call to a network control center or been forced to dispatch a technician to "touch the equipment."

WBEM is based on a management model that centers around the use of the Hyper Media Management Protocol (HMMP), and an appropriate

information model aptly named the Hyper Media Management Schema (HMMS). Nodes (for our purposes, a node will be referred to in the context that it is understood to be any IP network addressable device) supplying information are called "HMMP servers." A typical HMMP server might be a desktop, network printer or a file service. A node requesting management information is called an "HMMP client." HMMP clients may be a single process running in the background, or as complicated as a beefed-up Web browser with all the latest network management plug-ins. Information exchange can be initiated by either machine (node) and the roles of the two may switch. In fact, HMMP provides for it.

BEYOND SNMP

WBEM has effectively started out where SNMP left off. Distributed management has not only been planned for, it's part of the standard implementation of the protocol.

Corporate America may buy WBEM products, but that doesn't mean they don't want to manage the equipment that runs SNA, Vines IP or Novell's IPX right now.

Consider this: an HMMP server that contains a comprehensive implementation of the HMMS can switch roles to be a proxy to satisfy HMMP client requests for information. This WBEM answer for distributed management is called a HyperMedia Object Manager (HMOM). HMOM can be used to gather protocol-specific data and proxy requests for information across non-TCP/IP networks. Simpler WBEM devices with less broad implementations of the schema are called "providers."

The plan is to allow the HMOMs to proxy for as many requests from the HMMP clients as possible while satisfying requests for information that

needn't go any further, saving precious bandwidth. For example, if you were to place an HMOM on each of several bordering networks and use an HMMP client on a neighboring network, your HMOMs could gather information from the specific set of nodes to which they are closest. When information was requested by the client, the answer would be ready and would take less time (an increasingly critical factor in network management today) to retrieve. This model frees up the HMMP client from being forced to poll thousands of nodes to get the same information it could have access to from five HMOM proxies.

If WBEM product vendors are smart, they'll consider supporting multiple protocol stacks within their HMOM software implementations. A recent study suggested that while TCP/IP is obviously growing in popularity, it still represents a "protocol minority" across corporate network backbones. Corporate America may buy WBEM products, but that certainly doesn't

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mean that they don't want to manage the equipment that runs SNA, Vines IP or Novell's IPX right now — today. Network Control Technicians need the precious time it would take to load IP stacks on those nodes that require management to do more important things — like respond to network outages, rather than create them.

OH, MY ACHING BACKBONE

Some companies are going through major overhauls of their backbone networks, and are migrating away from those proprietary protocols. But even those few which have decided to take the plunge must admit that implementing TCP/IP on a 6,000-node network is a multiyear job. No company with that many networked nodes can afford to wait until they're finished implementing TCP/IP to manage their networks.

IPv6 doesn't really appear to present any insurmountable difficulties for WBEM. In fact, it may enhance security, an area where it is deficient. For example, IPv6 packet header extensions will allow WBEM implementations to encrypt community names and critical domain information on-the-fly, and will secure HMMP transactions against session stealing attacks.

A great number of organizations have substantial investments in NMS platforms that are scalable, proven, effective and, most importantly, paid for. So WBEM will get off to a slow start with companies like MCI, Sprint, AT&T and other network backbone providers. This is not to say that WBEM doesn't have any of the above qualities. It appears to be quite the contrary.

WBEM's biggest disadvantage right now, however, is that it's the new-kid technology on the management block. Furthermore, those companies which have invested heavily into the management of their network (especially in training) may regard the first couple of generations of WBEM products with disdain.

Will a shift of focus on the part of the legacy NMS platform providers, to account for a more competitively priced WBEM product, change the

industry for the better? Whatever the answer may be, large companies need WBEM to enhance the NMS capabilities they have (although certainly not to replace them) and smaller companies can now afford to purchase a fully functional and highly flexible NMS platform without breaking the bank. Considering the average reported cost of managing a networked device has

until now consistently risen, it's good to see a NMS platform that allows smaller network management platform users to "mind the penny" as it were.

—*What sort of network management are you doing these days? Let Greg know at greg@webnology.com.*

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SOFTWARE

TSI Delivers Mercator

TSI International Software (TSI) announced that HP's SAP Consulting Practice selected TSI's Mercator software tools to help reduce the cost and time associated with implementing SAP R/3 solutions. In addition to providing R/3 implementation services, HP America's SAP Consulting Practice helps organizations manage the process of migrating data to R/3 and integrating bolt-on systems with R/3. TSI's Mercator for R/3, a SAP-certified product for Application Link Enabling (ALE), is used by HP to connect R/3 to non-R/3 applications. ALE is SAP's strategic architecture for distributing R/3 functionality across the enterprise.

Mercator is also used for data cleansing to prepare data for HP's Interface Management software tool (IM/3), which aids in the SAP integration process. Mercator performs the first step in the process, transforming data from existing systems to the formats required by IM/3.

Contact TSI, 45 Danbury Rd., Wilton, CT 06897; (800) 338-4194; www.tsisoft.com.

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DataTools Announces Data Optimizer

DataTools Inc. announced Data Optimizer, a client-server database tool to compress, store and manage database data and UNIX files with an average 400 percent efficiency improvement. Data Optimizer allows client-server-based, high-volume data customers to reduce the costs of managing and storing strategic business information by optimizing the effectiveness of existing resources. With Data Optimizer, customers can transparently increase data storage through high-speed data compression,

automatic load balancing across available disk devices, and logical disk management and monitoring. Data Optimizer customers can expand very large databases such as data marts, data warehouses and OLAP systems while maintaining optimal system performance.

Contact DataTools, 3340 Hillview Ave., Palo Alto, CA 94303; (800) 721-8665; info@datatools.com; www.datatools.com.

Circle 399 on reader card

Empress RDBMS Available for Windows NT

Empress Software Inc. announced the availability of the Empress RDBMS Suite for Windows NT, a suite of multimedia RDBMS application development tools for the NT developer.

It features: the Empress RDBMS, which handles large bulk or multimedia data (BLOBs); the Empress HTML Toolkit for interfacing database driven applications to the Internet/intranet; and the Empress ODBC Server which enables the RDBMS to work with Microsoft and third-party ODBC-compliant tools including Visual C++, Visual Basic, Microsoft Word, Excel, Access, Lotus 1-2-3 and Lotus Approach.

Prices start at \$1,000 for two users. The Empress RDBMS also runs on UNIX platforms including: SCO, QNX, Lynx, Linux, Solaris for Intel, Sun Solaris, HP-UX, IBM AIX, Digital UNIX and Silicon Graphics' Irix.

Contact Empress Software Inc., 6401 Golden Triangle Dr., Greenbelt, MD 20770; (301) 220-1919; sales@empress.com; www.empress.com.

Circle 398 on reader card

Intergraph Software Solutions Introduces NFS Gateway

Intergraph Software Solutions introduced AccessNFS Gateway, which allows any

Windows user who has access to Windows NT Server to have access to the NFS file system. It is bundled in five, 10, 25 and 100 user packs. AccessNFS Gateway takes advantage of Microsoft's native TCP/IP protocol stack and utilities. It also supports any network card certified for use on Windows NT Server.

Contact Intergraph Software Solutions, Huntsville, AL 35894; (800) 345-4856; info@intergraph.com; www.intergraph.com.

Circle 374 on reader card

Millennium Computer Provides FirstStep SSO

Millennium Computer Corp. announced the availability of a Windows NT version of the FirstStep Single Sign-on (SSO) Authentication Server. FirstStep SSO allows Windows 3.1, Windows 95, Windows NT and Macintosh clients to connect with HP-UX, Windows NT, Sun Solaris, IBM AIX and other IBM, Unisys and Digital servers as well as other main-frame systems through a single secured log-on. It provides access beyond the operating system level and allows users to sign-on to applications and network gateways with one password.

Contact Millennium Computer Corp., 2851 Clover St., Pittsford, NY 144534; (716) 248-0510; info@millenniumcc.com; www.millenniumcc.com.

Circle 372 on reader card

FacetCorp's FacetWin Supports HP-UX

FacetCorp announced that FacetWin now enables the seamless integration of Windows 95 and Windows NT clients with HP-UX 9.x- and 10.x-based servers. It includes an all-in-one features set that allows users of Windows 95 and Windows NT clients to transparently access and use the UNIX-based network resources (such as files, disk, applications and printers). Features include transparent file and print services, terminal emulation and the ability to automatically back up networked PCs to an HP-UX tape drive. Price is \$195.

Contact FacetCorp., 4031 W. Plano Pkwy., Plano, TX 75093; (972) 985-9901; info@facetcorp.com; www.facetcorp.com.

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O'PIN Systems Enhances REVEAL/CS

O'PIN Systems released REVEAL/CS for Windows NT. REVEAL/CS on the NT platform has a NT look and feel rather than being a simple port of the UNIX version of REVEAL/CS. NT features include an

automatic spool file capture similar to that provided for the MPE operating system, as well as wizards to automatically configure and capture reports coming from other sources including legacy systems.

Contact O'PIN Systems, 7900 International Dr., Ste. 305, Minneapolis, MN 55425; (612) 883-2888; sales@opin.com; www.opin.com.

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Hummingbird Announces Lotus Notes Integration

Hummingbird Communications Ltd. announced an upgrade to its Common Ground DigitalPaper ProViewer that supplies full integration of all DigitalPaper documents with Lotus Notes. DigitalPaper documents, which can be created from any desktop application simply by printing, maintain the original appearance of all documents regardless of the operating system, applications, or fonts present on the view-

ing computer. Hummingbird's DigitalPaper ProViewer integrates Lotus Notes with DigitalPaper via the Notes Field Exchange (Notes/FX), making it possible for Notes users across the network, intranet or extranet to share documents via a Notes database without requiring the originating application on every desktop.

Contact Hummingbird Communications Ltd., 1 Sparks Ave., N. York, ON M2H 2W1; (416) 496-2200; sales@hummingbird.com; www.hummingbird.com.

Circle 397 on reader card

Candle Corp. Releases Sentinel Manager

Candle Corp. introduced its SentinelManager, which provides enterprise users with NT strategic management solutions.

The SentinelManager offers a performance monitoring and availability management solution that assists customers in man-

aging their Windows NT environments. Key features of SentinelManager include reflex automation, log monitoring, historical data collection, multisystem and cross platform correlation.

SentinelManager costs \$11,000.

Contact Candle Corp., 2425 Olympic Blvd., Santa Monica, CA 90404; (800) 843-3970; www.candle.com.

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Insight Ships Squiggle 3.0

Insight Development Corp. announced Squiggle 3.0, a line enhancement and hand-sketch simulation software. Squiggle 3.0 now supports Windows 95 and Windows NT, in addition to Windows 3.x supported by the previous version. Squiggle, a tool for preparing design concepts and illustrations into more "viewer friendly" images, allows users to transform HPGL and HPGL/2 plot files into hand-drawn art in minutes.

Squiggle works with files from AutoCAD, AutoCAD LT, AutoSketch, ArchiCAD, ALLPLAN, Cadkey, Corel-Draw, DataCAD, DesignCAD, Draphix CAD, Drawbase, DynaCAD, EasyCAD, MicroStation, Visual CADD and any PC-based CAD, drawing or graphics application that outputs HPGL or HPGL/2.

Squiggle 3.0 is priced at \$99.

Contact Insight Development, 2420 Camino Ramon, San Ramon, CA 94538; (800) 825-4115; info@insightdev.com; www.insightdev.com.

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C/2000 Analyzes C/C++ For Y2K Compliance

Metro Information Systems Corp. announced C/2000 software to analyze C and C++ executables, object modules and source code for Year 2000 compliance.

C/2000 is available on CD-ROM for: HP-UX, IBM AIX, Sun Solaris and SunOS, SCO, Windows 3.X, Windows 95 and Windows NT.

Contact Metro Information Systems Corp., 195 SW 15 Rd., Ste. 600, Miami, FL 33129; (800) 722-4607; c2000@metroinfo.com; www.metroinfo.com.

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Micro Logic Offers Info Select Version 4

Micro Logic Corp. announced Version 4 of its Personal Information Manager "Info Select" for Windows 95. Version 4 enhancements include: e-mail and Web support, data organizing and writing tools.

New From HP

JetDirect 10/100BaseTX Print Server — HP

unveiled a new JetDirect print server that makes it easy for customers to install and manage printers in an Ethernet or Fast Ethernet environment. The HP JetDirect print server card for 10/100BaseTX allows network administrators to attach printers to 10BaseT networks today and to 100BaseTX in the future.

The JetDirect print server for 10/100BaseTX supports the IEEE "auto-negotiation" standard, meaning it automatically assesses whether it is connected to a 10BaseT or 100BaseTX network.

It also: offers 1MB of flash memory; offers fast print job throughput; offers computability with 17 network operating systems, including Novell's Directory Services and NetWare Distributed Print Services, Windows NT (with DHCP/WINS), Windows 95, IBM OS/2 and UNIX; ships with the latest version of HP JetAdmin software; and supports HP Web JetAdmin (see below). Price is \$479.

Web JetAdmin Version 2.0 — HP announced HP Web JetAdmin Version 2.0 printer management software for corporate intranets. This version includes support for HP-UX, Sun Solaris, OS/2 Warp and Windows NT server platforms.

In the new help tool, help pages guide users through printer management activities, including device discovery, device grouping and printer diagnostics.

This version also uses JavaScript to provide a new GUI. With interactive displays and animated graphics, the intuitive interface helps the administrator locate, diagnose and manage their printer environments quickly and more intuitively than before.

Other features include: printer environment mapping; broad printer support; a browser-based interface; remote printer management; three-tiered security; and easy technical support. Free versions are available from www.hp.com/go/webjetadmin.

IEEE 1394 Serial Bus Standard Support — HP announced its support for the IEEE 1394 serial bus standard for data communication between computer and peripheral devices. HP intends to implement the 1394 standard across major product lines during the next few years.

The IEEE 1394 standard enables transfer speeds of up to 400Mbps (asynchronous and isochronous). Because the 1394 standard is defined for peer-to-peer operation, it enables more effective communication between computer and peripheral devices. Standardized connectors and wiring are included in the standard.

For more information, contact your local sales office or call (800) 533-1333.

Info Select Version 4 operates on any Windows 95-compatible PC. The Info Select Version 4 Upgrade costs \$69.95 for current users, and \$149.95 for new users.

Contact Micro Logic Corp., 89 Leuning St. 7 South Hackensack, NJ 07606; (201) 342-6518; info@miclog.com; www.miclog.com.

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SBE Enhances netXpand 3.0

SBE Inc. announced remote access features to its netXpand software Version 3.0.

netXpand software 3.0 provides a simple method to connect the entire office through a single-user Internet account. It offers data compression for ISDN and serial connections. It also includes a feature used to automatically bring up or hang up a telephone line based on network traffic. In addition, netXpand software 3.0 provides enhanced compatibility with peer-to-peer networks such as Artisoft's LANtastic and Windows 95 and "firewall" security.

Contact SBE, 4550 Norris Canyon Rd., San Ramon, CA 94583; (800) 214-4SBE; info@sbei.com; www.sbei.com.

Circle 392 on reader card

V-Systems Introduces VSI-FAX Gold Series

V-Systems Inc. released their VSI-FAX Gold Series software. The fax server product, available on most UNIX platforms (including HP, IBM, SCO and Sun) and Windows NT, provides: full functionality in sending, receiving and managing all faxes; API/command-line interfaces and autosend directory support; inbound fax routing using manual of DTMF techniques or DirectFax; scalable fax automation through the Virtual Fax Server; and simplified installation and GUI-based administration.

The fax client, available on Windows 3.1, Windows 95 and Windows NT, UNIX (HP, IBM, SCO and Sun) and Web (HTML 3.0) platforms, provides: fax send, receive, display, router, print, rotate, scale and archive from GUI, character-based and Web clients; private and shared phone-books and attachments; broadcast faxing from the desktop; direct integration with other Windows and UNIX applications; automatic update of Windows clients across the network; and send, retrieve and manage fax across the Internet, with a "firewall friendly" Web client connected to the user's home fax server.

Prices range from \$1,195 to \$2,995, depending on platform. The Virtual Fax

Server costs \$795. Network clients for Windows desktops, UNIX workstations and Web users cost \$59 per seat.

Contact V-Systems Inc., 32232 Paseo Adelanto, Ste. 100, San Juan Capistrano, CA 92675; (714) 489-8778; info@vsi.com; www.vsisfax.com.

Circle 388 on reader card

Extensis Expands Product Line

Extensis expanded its productivity enhancement software line for the Windows market. Extensis also announced it will address productivity issues for pre-press professionals with a comprehensive line of software that improves workflow productivity and minimizes wasted materials. Covering the spectrum from design to output, Extensis provides productivity improvements and special effects solutions for users of the leading image manipulation, illustration, layout and pre-press applications.

Contact Extensis Corp., 1800 S.W. First Ave., Ste. 500, Portland, OR 97201; (503) 274-2020; info@extensis.com; www.extensis.com.

Circle 389 on reader card

NetManage Announces Z-Mail Pro 6.1

NetManage Inc. introduced Z-Mail Pro version 6.1. It has enhanced IMAP4 support, inline HTML composition and viewing, and support for Windows 3.x, Windows 95 and Windows NT users. Z-Mail Pro version 6.1 includes security encryption, comprehensive rules and filtering, offline support, special forms, discussion groups and search capabilities.

Z-Mail Pro 6.1 costs \$79 per copy.

Contact NetManage Inc., 10724 N. De Anza Blvd., Cupertino, CA 95014; (408) 973-7171; info@netmanage.com; www.netmanage.com.

Circle 390 on reader card

Oswego Software Ships HP And HT Basic For Windows

Oswego Software Inc. shipped the HP and HT Basic For Windows release 8.3 of the Alma flowchart CASE tool. Alma flowcharts your HP Basic or HT Basic for Windows code by reading your source code. It produces a flowchart which reproduces your logic in diagrammatic form.

Contact Oswego Software, P.O. Box 310, Oswego, IL 60543; (708) 554-3567; help@oswegosw.com; www.oswegosw.com.

Circle 387 on reader card

CPL Systems Provides Scrambler Pager

CPL Systems announced the Scrambler Pager latest release which includes several system monitoring enhancements, allowing NT systems to be monitored from home on a "lights-out" basis. The product is called Scrambler/NT. The Scrambler Pager can also be integrated to any existing application software.

The Scrambler includes security features such as data encryption, dial-back and Reflection interrogation.

Contact CPL Systems, 309 Morris Ave., Spring Lake, NJ 07762; (908) 974-8484; chas@hillary.com.

Circle 391 on reader card

HP Chooses SNAPpacks

HP chose Information Builders' SNAPpacks as the first SAP R/3 enterprise reporting tool for the HP Mid-Market Program for SAP. SNAPpack Power Reporter and SNAPpack Open Reporter allow organizations using SAP's R/3 applications to build enterprise reporting systems that consolidate all their SAP and non-R/3 data, and support all types of users.

The common feature of all SNAPpacks is the SNAPview Metadata Integrator which shields users from the complexity of SAP R/3 data, making it easier for them to produce their own custom and ad hoc reports without help from an ABAP/4 expert.

Contact Information Builders Inc., 1250 Broadway, New York, NY 10001; (212) 736-4433; info@ibi.com; www.ibi.com.

Circle 385 on reader card

Feith Systems And Software Releases FDD

Feith Systems and Software Inc. announced that HP has completed the replacement of its personnel employee records imaging system with the Feith Document Database (FDD), including the conversion of 7.5 million pages.

FDD is a complete industrial-strength document storage and management system, which integrates imaging, COLD (computer output to laser disc), document management, fax and workflow with existing legacy applications.

Contact Feith Systems And Software Inc., 425 Maryland Dr., Fort Washington, PA 19034; (215) 646-8000; fdd-info@feith.com; www.feith.com.

Circle 384 on reader card

HARDWARE

Diamond Multimedia Launches Monster Sound

Diamond Multimedia Systems Inc. announced its Monster Sound PCI-based audio accelerator.

Diamond's Monster Sound provides multistream positional 3D audio for truly immersive, true-to-life 3D sound. Diamond Multimedia's audio accelerator also enables quad-speaker output allowing users to turn their computer into a PC sound machine that is similar to home theater surround sound systems.

Diamond Multimedia's Monster Sound audio accelerator, including software bundle, is available for \$199.95.

Contact Diamond Multimedia, 2880 Junction Ave., San Jose, CA 95134; (408) 325-7000; sales4u@diamondmm.com; www.diamondmm.com.

Circle 382 on reader card

Extreme Produces Summit Switch Family

Extreme Networks announced its Summit Switch family. Two models are available for Gigabit Ethernet backbone implementations and interconnection with existing Fast Ethernet switches.

Summit switches share a common architecture based on a 17.5Gb non-blocking switch fabric that ensures fast data throughput. Based on Extreme's Summit Chip Set, this architecture provides full-gigabit performance on each port, along with wire-speed Layer 2 and Layer 3 switching.

ExtremeWare is a standards-based software suite that implements the RSVP protocol for bandwidth reservation, Distance Vector Multicast Routing Protocol (DVMRP), Internet Group Management Protocol (IGMP) for multicast control and full VLAN capabilities based on IEEE 802.1p and 802.1Q draft standards.

Summit1 and Summit2 switches are \$24,995 and \$14,995, respectively.

Contact Extreme Networks, 1601 S. DeAnza Blvd., Ste. 220, Cupertino, CA 95014; (408) 342-0999; www.extremenetworks.com.

Circle 378 on reader card

Force Introduces Pentura 4710

Force Computers announced the Pentura 4710, a CompactPCI-based Windows NT workstation.

Pentura 4710 expansion capabilities include: two 3U and one 6U CompactPCI slots to add high-speed I/O functionality;

one PCMCIA slot to add (for example) Flash disk cards; one PCI Mezzanine Card (PMC) slot to add graphics, networking or other functions; and a base memory configuration of 32MB of EDO DRAM with ECC protection, expandable to 128MB.

Other standard features include 512KB of level two synchronous burst cache, a 2 or 4GB hard disk, a 12x CD-ROM drive, 1.44MB floppy drive, and an additional mass-storage expansion bay. Standard inter-

faces include fast Ethernet, mouse and keyboard ports, an ECP/EPP parallel port and two serial ports.

Price starts at \$4,995 per unit for the base configuration.

Contact Force Computers Inc., 2001 Logic Dr., San Jose, CA 95124;

(408) 369-6000;

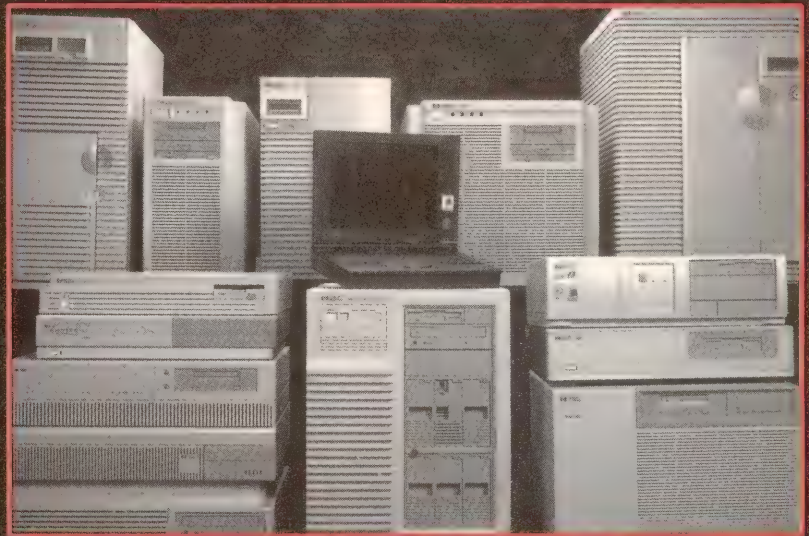
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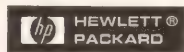
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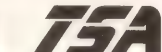
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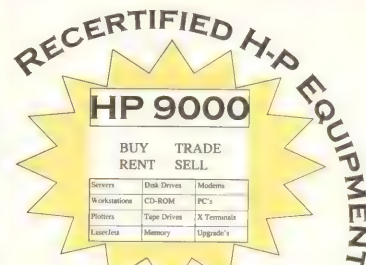
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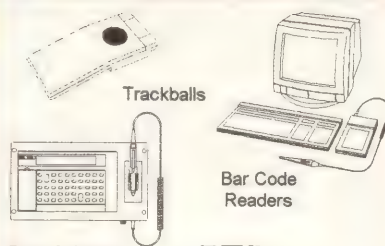
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CIRCLE 255 ON READER CARD

Asante Announces IntraStack & IntraSwitch

Asante Technologies Inc. announced a new line of switching products that optimize the flow of information in an intranet while integrating the customer's switching infrastructure with Windows NT servers.

The IntraStack 10/100 stackable Fast Ethernet switch and the IntraSwitch 5324 desktop switch, provide scalable solutions designed to minimize network congestion caused by intranets and other bandwidth-intensive applications. The stackable switch design using the company's Goldcard connector technology also allows network managers to deploy high-bandwidth workgroups and high-speed network segments.

IntraStack costs \$4,750 for the 14-port base module and \$6,295 for the 16-port expansion module. IntraSwitch costs \$2,750.

Contact Asante Technologies, 821 Fox Lane, San Jose, CA 95131; (408) 435-8388; support@asante.com; www.asante.com.

Circle 380 on reader card

Falcon Provides Data Access

Falcon Systems Inc. introduced the FastfilePro 5000 and FastfilePro 9000, two new data access servers. The 5000 and 9000 incorporate features such as a hardware-based RAID architecture, the AerREAL operating system and implementation of the SMB protocol, all of which contribute to reliable and simultaneous file access for heterogeneous workgroups (NFS/UNIX, Windows NT, Windows 95 and http read-only clients).

new products

The FastfilePro 5000 is a departmental sever designed for smaller workgroups that are specifically looking to significantly improve local file access times while eliminating the bottlenecks of companywide network access. It contains 64MB of standard RAM (upgradeable to 256MB).

The 9000 model is an enterprise-level server designed for high-volume file access demands of larger departmental groups up to hundreds of clients. Powered with the 200MHz PentiumPro microprocessor, the 9000 can be configured with up to 3.1TB of addressable disk storage in a RAID 0 format. Price varies, depending on configuration.

Contact Falcon Systems Inc., Server Development Div., 3951 Performance Dr., Sacramento, CA 95838; (800) 782-2330; info@falcons.com; www.falcons.com.

Circle 379 on reader card

Racal Introduces WINstream ISDN Modem

Racal Data Group announced the WINstream ISDN Modem, a desktop device providing the combined speed of multilink PPP 128Kbps access to ISDN and security of CHAP (Challenge Handshake Authentication Protocol), an encrypted challenge/response authentication protocol. The unit also supports PAP (Password Authentication Protocol). WINstream is available in two models, data/voice or data only.

Price for the U-Interface configurations of WINstream mode are \$449 with voice ports, and \$379 for the data-only version. S-Interface configurations costs \$429 with voice ports, and \$359 data-only. The Voice Port UPS option costs \$59.

Contact Racal, 1601 N. Harrison Pkwy., Sunrise, FL 33323; (800) RACAL-55; www.racal.com/rdg.

Circle 377 on reader card

Panasonic Ships Multifunction Fax

Panasonic Office Products Co. (POPC) shipped its 5-in-1 Panafax UF-344.

The Panafax UF-344, designed for small, mid-sized and COHO (corporate office/home office) environments, provides plain-paper faxes on letter, legal and A4 formats. To turn the UF-344 into a color inkjet printer with 360 x 360 dpi resolution, users simply snap in a color cartridge. The UF-344 incorporates a plain-paper convenience copier with color inkjet capabilities.

The UF-344 will scan a document in color or black-and-white, and immediately

transfer it to the PC where it can then be sent as an e-mail attachment, or used for Web publishing, color presentations and proposals. Panafax's UF-344 offers up to six second per page transmission with a 14.4Mbps modem and Modified Modified Read (MMR) compression.

The Panafax UF-344 includes Panasonic's Windows-based fax software to transmit and receive documents directly from the PC. The Energy Star-compliant Panafax UF-344 costs \$2,195.

Contact Panasonic, Two Panasonic Way, Secaucus, NJ 07094; (800) 742-8086; www.panasonic.com/office.

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Int'l. Computer Power Offers RotoUPS

International Computer Power announced the RotoUPS rotary UPS series. RotoUPS delivers precise, totally isolated and uninterruptible computer-grade power for the full spectrum of domestic and international, rugged and clean environment UPS applications. It is available in a variety of single- and three-phase input and output voltages and frequencies in power ratings from 5KVA to 1000KVA.

Contact International Computer Power, 2620 Lee Ave., El Monte, CA 91733; (818) 443-7557; sales@rotoups.com; www.rotoups.com.

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Xyplex Networks Delivers EdgeBlaster

Xyplex Networks announced EdgeBlaster, a WAN edge server designed for the network edge — the junction between corporate, public and ISP networks. It features a stackable, open architecture using standard hardware components and provides integrated switching, routing, access serving and digital modem technologies.

Key features include: digital modem technology supporting up to 56Kbps; integrated HTML user interface; full IP routing support; WANScape — universal inverse multiplexing and bandwidth management across multiple WAN services; HDLS support; support for all WAN service types — ISDN (PRI and BRI), Frame Relay, X.25, sync and async; channelized T1/E1 and channelized DS3 support; 10/100 Ethernet switching support; fixed media storage; DES encryption; and RMON support.

Contact Xyplex Networks, 295 Foster St., Littleton, MA 01460; (508) 952-4700; info@xyplex.com; www.xyplex.com.

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☐ Needs to interoperate better with Windows NT ☐ I don't have an opinion
- ✓ **6. Do you consider HP your primary computing platform? A primary computing platform is defined as running at least 70 percent of your "back-end, mission-critical" applications using HP hardware and software.**
☐ Yes ☐ No
6a. If yes, are these back-end, mission-critical applications running on:
☐ HP 9000 ☐ HP NetServer ☐ HP 3000 ☐ A combination of any of the three
- ✓ **7. Would you abandon HP as your primary computing platform based on how you feel about any of their current strategies?**
☐ Yes ☐ No If yes, which strategy or strategies? _____
- ✓ **8. Would you abandon HP as your primary computing platform based on any of their current hardware or software technologies?**
☐ Yes ☐ No If yes, which technology or technologies? _____
- ✓ **9. What vendor would you consider a reasonable alternative to HP?**
☐ IBM ☐ Digital ☐ Sun ☐ Compaq ☐ Other _____

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